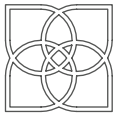
SOUTH YONGE STREET CORRIDOR

Streetscape Master Plan Study *Update*

Phase 4A: Detailed Design Guidelines

MARKHAM Richmond Hill VAUGHAN York Region

Consultant



EDA
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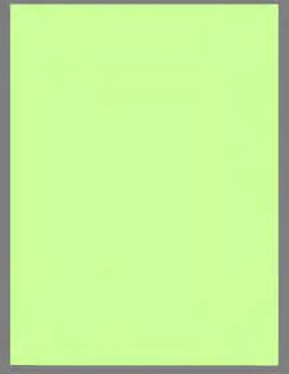
FRAMEWORK



1. Framework

1.1 INTRODUCTION

In keeping with the approved 2012 South Yonge Street Corridor Streetscape Master Plan in both spirit and essence, updating of the Detailed Design Guidelines and Standards of the South Yonge Street Corridor Streetscape Master Plan (SYMP) will continue to be built upon the foundation of a bold, sustainable and achievable concept that will create a major vibrant Main Street for York Region. The Updated Phase 4A Streetscape Master Plan Report continues to articulate a broad vision that promotes enhanced safety of cyclists while supports development of a subway extension from Steeles Avenue to Richmond Hill Centre, together with major new mixed use centres, that will accommodate high levels of density and increased population.

These Design Guidelines and Standards provide more detailed resolution of the master plan vision. The purposes of the Design Guidelines and Standards are to:

1. Refine the overall vision for the Updated South Yonge Street Corridor Streetscape;
2. Bridge the gap between the updated master plan ideas envisioned by York Region's Project Core Team (PCT) Stakeholder process and the eventual implementation process; and,
3. Provide the guidelines for implementation that assumes a degree of latitude without compromising the overall intent and integrity of the updated master plan.

1.2 USER GUIDE

The Design Guidelines and Standards document will have several uses and audiences. First, it provides supporting documentation for the municipal planning approvals process. As such, they will provide a reference and guidance for future development proposals as they relate to the proposed streetscape along the South Yonge Street Corridor. As well, they will provide guidance and framework for York Region as it considers roadway, transit and boulevard design improvements and implementation in the future.

The Design Guidelines and Standards document is organized into several sections. First, it identifies the unifying elements – those items that form the most continuous components of the right-of-way. These include the roadway itself with its travel lanes, medians as well as the updated boulevard consists of the Amenities Zone including planting and furniture, cycling facilities, pedestrian clearway and public-private interface zones. Additional urban design criteria build on the existing planning and urban design studies which have been undertaken at the municipal level for various development sites. In addition, a range of techniques and strategies that support area customization for those areas of special character along the corridor are documented. The coordination of utilities and services, both above and below grade, are also detailed. Finally, sustainability, green infrastructure and accessibility criteria are outlined as a basis and should be applied to future project submissions where necessary.

1. Framework

1.3 ORGANIZATION

The Detailed Design Guidelines and Standards Document for South Yonge Street Corridor Streetscape Master Plan is organized into seven sections and one appendix.

SECTION 1: FRAMEWORK

Organizational structure of the report and user guide. The Opportunities for Construction Plan is also provided here for reference.

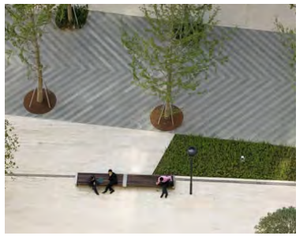
SECTION 2: UNIFYING ELEMENTS

Elements within the right-of-way that are consistent along the streetscape, including zones within the roadway and the boulevard.

SECTION 3: URBAN DESIGN CRITERIA AND REQUIREMENTS

Guide to municipal requirements for the final stages of development.

Figure 1 to 9: Precedent Images



SECTION 4: SPECIAL CHARACTER AREA CUSTOMIZATION

Customized elements within each character area.

SECTION 5: UTILITIES AND SERVICES

Recommended philosophy, locations and organization for all utilities and services, including those at-grade and below grade.

SECTION 6: SUSTAINABILITY CONSIDERATIONS

Criteria and performance measures adopted from ASLA Sustainable Sites Initiative (SITES) and LEED 2009 for Neighborhood Design (LEED-ND). Tree and planting Maintenance is also outlined.

SECTION 7: ACCESSIBILITY CONSIDERATIONS

Criteria and technical requirements adopted from Building Environment Standards (2010) developed under the Accessibility for Ontarians with Disabilities Act.

APPENDIX 1: RECOMMENDED TREES, PLANTS AND SHRUBS

APPENDIX 2: UTILITIES LOCATION

2

UNIFYING ELEMENTS

2.1 RIGHT-OF-WAY ZONES

Unifying streetscape elements will be located throughout the right-of-way zone along the length of Yonge Street, in both the street design of the roadway and the boulevard. The roadway is primarily the vehicular zone, while the boulevard is generally consists of the streetscape amenities, cycling and pedestrian facilities zones. These elements will provide continuity along the entire length of the streetscape, while providing certain variations within the special character areas.

2.1.1 ROADWAY

The design of the street or roadway has incorporated mainly elements relating to vehicular travel lane dimensions, as detailed in cross-sections in this report, along the length of the streetscape. On-street parking is found in select locations along the street, while medians are introduced at the north and south gateways with a consistent centre left turn lane along the length of Yonge Street.

2.1.2 BOULEVARD

The boulevard also has a number of unifying elements present in its design. The boulevard is divided into a number of distinct, functional zones:

- Amenities zone within which there are three (3) subzones:
  - Continuity Strip Zone;
  - Lighting Zone;
  - Furnishing and Planting Zone (includes lay-by parking bays);

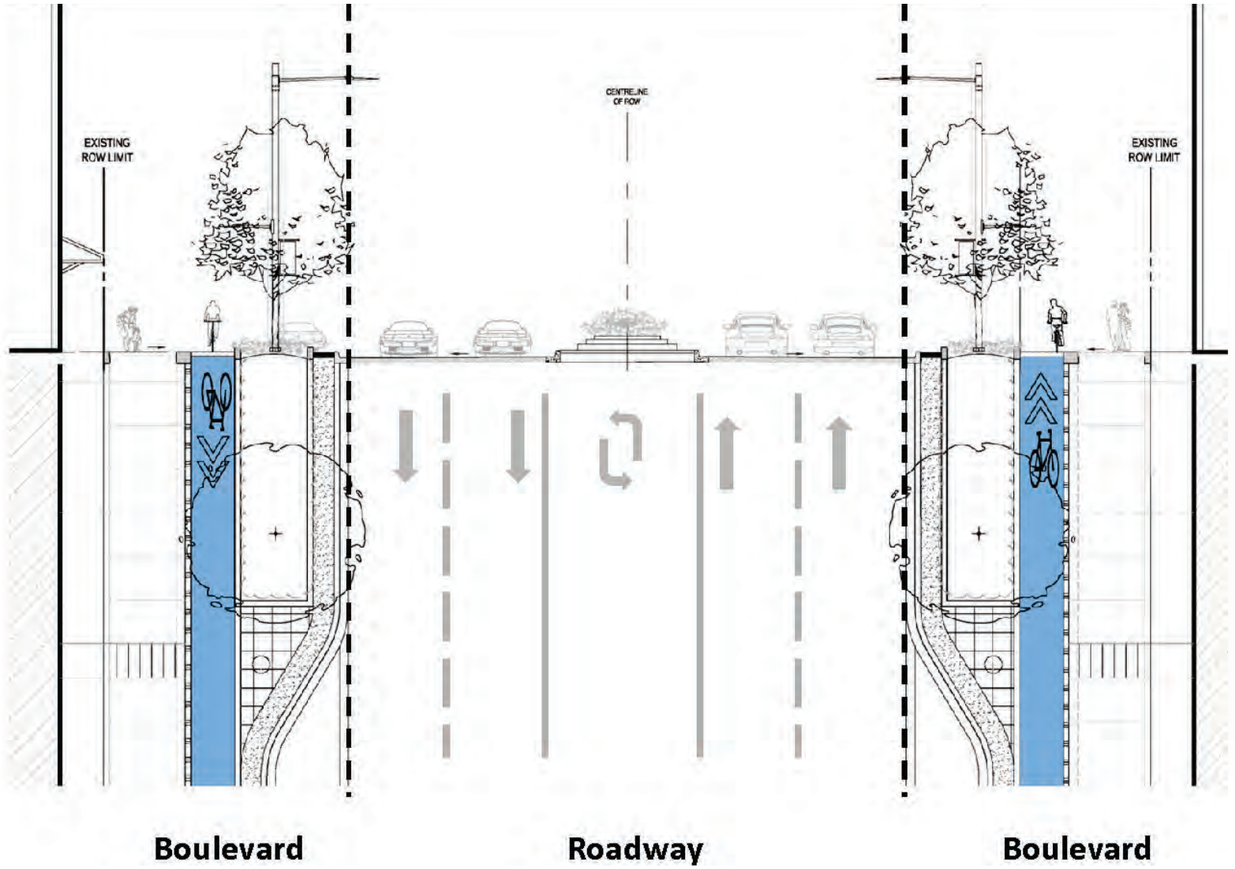


Figure 10: Typical Right-Of-Way Zones

- Cycling Facilities Zone;
- Pedestrian Clearway Zone, and
- Public / Private Interface Zone

The Continuity Strip Zone and the Public / Private Interface Zone have a consistent location along the length of the streetscape, while variations may occur within the amenities zone, the cycling facilities zone and pedestrian clearway zones. This variance is dependent on existing R.O W widths and will help to provide definition and distinction to the special character areas.

2.2 STREET DESIGN

2.2.1 EXISTING ROADWAY INFRASTRUCTURE

To the extent possible, minimizing the cost and / or impact of changes to the street design in order to achieve the desired streetscape development objectives is a key goal of the Yonge Street Corridor Streetscape Master Plan.To this end, elements of Transportation System Management (TSM) have been recommended to maintain existing corridor operating conditions while improving the streetscape of the corridor. This includes:

- Narrowing basic lane widths;
- Reallocating existing pavement dimensions and incorporating cycling facilities within boulevards on both sides of Yonge Street;
- Maintaining key functional elements of existing lane configurations (centre left turn lane) to maximize corridor accessibility and minimize impact upon through capacity;
- Adopting access management strategies to improve private driveway design, location, and operation relative to corridor operating conditions (from general vehicular, transit, bicycle, pedestrian, and urban design perspectives);
- Addressing conceptually intersection capacity through signal timing / phasing efficiencies and progression considerations;
- Minimizing the need to relocate utilities until there is an opportunity or until final coordination of utility placement is achieved and more efficient construction can occur;
- Protecting for existing bus stops, where possible, in advance of the future potential route consolidation and rationalization that would follow the construction of the Yonge Line subway extension. Changes to improve bus operations n the near-term could include transit priority measures such as HOV lanes (e.g. peak period and / or peak direction), potential queue jump lane opportunities (through strategic use of the centre left turn lane in sections), elimination of right turn lanes and implementing for side transit stops, etc.

Potential Modifications

Street cross-sections have been prepared to reflect typical sections of Yonge Street as they relate to how pavement width is deployed. Pavement width is one of the basic physical dimensions within the Yonge Street Right-of-Way (ROW) that needs to respond to vehicular capacity and transit services within the corridor. Identifying what is required and how it is configured must be done in conjunction with the necessary boulevard space to accommodate active transportation modes and streetscape improvements. These two major elements will work in concert to determine what ROW space is required and how things, such as utilities, can be efficiently arranged.

The basic sections of Yonge Street as they relate to pavement width are:

- Steeles to just north of Clark – 7 lane cross-section
- Just north of Clark to approximately Longbridge – 5 lane cross-section
- Longbridge north, under the Highway 407 ETR corridor to the Highway 7 connecting link – 7 lane cross-section plus on- and off-ramp lanes; and,
- North of the Highway 7 connecting link – 5 lane cross-section with BRT/LRT ROW (north of Garden Avenue).

Each segment forms the basic structure of the streetscaping opportunities. These sections are illustrated in Section 4: Special Character Area Customization.

2.2.2 TRAVEL LANES

Travel lanes are located between the curb and the median (where located). Four vehicular travel lanes are consistently located along the entire streetscape.

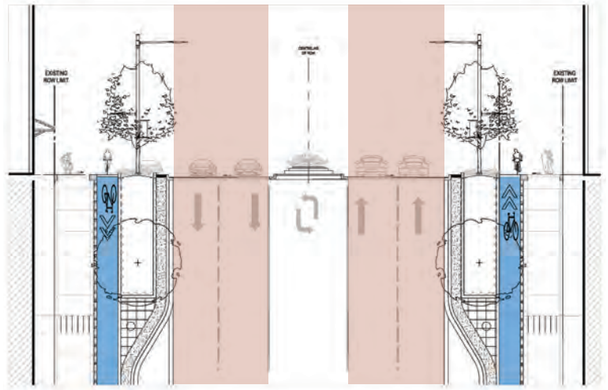


Figure 11: Key Plan

Travel lanes are located between the curb and the median (where located). Four vehicular travel lanes are consistently located along the entire streetscape.

General Guidelines

- 4 vehicular travel lanes, 2 in each direction of travel;
- Through travel lane of 3.3 metres in width, and curb travel lane of 3.5 metres in width;
- Reduced speed limit;
- Reduced lane widths;
- Urban intersection design standards;
- Reduced pedestrian crossing distances;
- Eliminated dedicated right turn lanes (where possible);
- Increased frequency of intersections / pedestrian crosswalks.

2.2.2.1 POSTED SPEED

The existing posted speed through the study area is 60 kilometres/ hour (km/h). In order to reflect an increasingly more urban condition through the study area and to provide a more conducive environment for both pedestrian and cyclists, it is recommended that the speed limit be reduced. This will also assist in reducing offsets between edge of pavement and utility poles within the boulevard.

Guidelines

Existing posted speed limit shall be reduced from 60 km/h to 50 km/h to reflect a more urban condition along Yonge Street.

2.2.2.2 LANE WIDTH

Reduced lane widths through the corridor are recommended and shall be consistent with more progressive urban conditions and consistent with dimensions cited in York Region's Designing Great Streets (2019) (design guidelines for 6 lane Regional Street) as well as the Environmental Assessment documents prepared in support of the BRT / LRT and Subway extensions through the study area.

Guidelines

- Through lane widths of 3.3 metres;
- Curb lane widths of 3.5 metres;
- Centre left turn lanes of 3.5 metres;
- Left turn lanes as narrow as 3.0 metres.

The above guidelines may be updated as York Region intends to review lane widths in a comprehensive manner following a senior management/commissioner level discussion in 2021.

2.2.2.3 INTERSECTIONS

Adopting more urban intersection design parameters and confi gurations are also recommended. This includes adopting smaller daylighting triangles (5 to 10 metre triangles or roundings), corner radii (to better facilitate pedestrian conditions at junctions, but to reflect the functional design needs of appropriate design vehicles depending upon the cross-street), elimination of right turn lanes (where appropriate) to reduce pedestrian crossing distances and increase pedestrian / boulevard space in the vicinity of public street junctions, eliminating channelized right turn configurations (where appropriate), better locate above-grade traffic signal infrastructure to increase clear-dimensions within pedestrian zones, etc.. All left turn lanes, located at signalized intersections, should be designed to have zero-to-positive offset and ensure appropriate sightline requirements are met.

Guidelines

- Utilize smaller daylighting triangles / roundings of 5 to 10 metres;
- Utilize smaller corner radii;
- Right turn lanes and channelized right turn configurations shall be eliminated, where appropriate;
- Above-grade traffic signal poles shall be located to ensure a clear and barrier-free pedestrian zone.

In addition to pedestrian improvements at intersections, space will need to be made to facilitate the safe crossing by bicycle as well as permit cyclists to complete two stage turns. This includes designing for protected intersections with appropriate queuing and buffer spaces and the inclusion of two-stage queue boxes.

2.2.2.4 CROSSWALKS

Given the arterial nature of Yonge Street and the need to maintain a high level of both capacity and peak period progression (under both

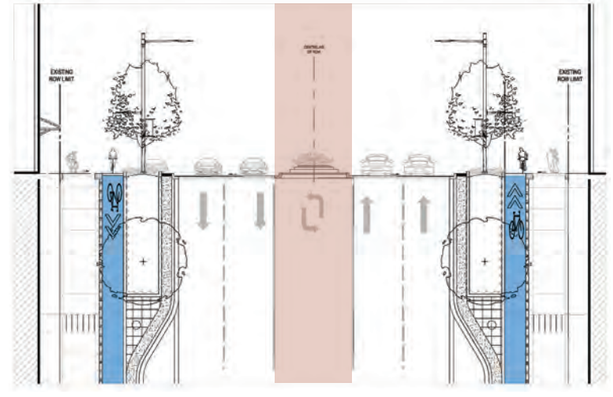


Figure 12: Key Plan

interim and ultimate conditions), formal pedestrian crossings would be accommodated under signalized conditions. Given the spacing requirements to maintain an effective urban arterial road network, signalized pedestrian crossings are best accommodated at public street intersections. Although detailed operational analyses are required to evaluate the introduction of new public street signalized intersections within the corridor, signalized intersection spacing opportunities should be considered within the 215 metres (minimum) range and up. This is consistent with the guidelines cited in Designing Great Streets (2019) (design guidelines for 6 lane Regional Street).

Guidelines

- Signalized intersection spacing shall occur predominantly at street intersections, with some exceptions;
- Signalized intersection spacing shall be at a minimum of 215 metres.

2.2.3 MEDIANS / CENTRE LEFT TURN LANE

Medians are located in the centre of the roadway, separating the vehicular travel lanes. Medians act as a refuge for pedestrians crossing Yonge Street, provide an area for landscaping and street trees, provide opportunities for public art and articulate gateway features. Within the Yonge Street Corridor, medians are located at the north and south boundaries of the study area, while areas in between will have a centre left turn lane.

General Guidelines

- 4.0 - 5.0 metres in width at south boundary of study area;
- 3.0 - 5.0 metres in width throughout study area (widening to 5.0 at signalized intersections to accommodate left turn lane and small median for traffic signal);
- 11.0 metres in width north of Highway 7 to Scott Drive / Bantry Avenue.

2.2.3.1 PURPOSE AND FUNCTIONS

Medians within the right-of-way would be provided for one of several reasons; centre left turn lane (flush with pavement), protected left turn lanes mid-block or at intersections (raised island portions with appropriate taper and storage dimensions), landscaped areas for urban design (raised islands of sufficient dimension to accommodate planned hard or soft designs). Under some conditions (very wide ROW's), medians offer refuge for pedestrians when crossing at controlled or uncontrolled locations.

2.2.3.2 STRATEGIC LOCATIONS

Medians within the study area exist in the form of flush centre left turn lanes; provided to facilitate left turn access to and from adjacent land uses. In some instances, the medians are maintained through areas where little or no access is afforded adjacent properties.

The centre left turn median south of Clark is maintained however; the overall pavement width is reduced to reflect a 5 lane plus median cross-section. Median lengths are governed by block spacing and the need for left turn lanes at signalized intersection and corresponding vehicle storage and intersection operating criteria. North of Clark to Longbridge, the cross section of Yonge Street maintains a 5 lane plus median configuration. The frequency of private driveways and left turn access / egress will influence whether the median can be landscaped or will retain a centre left turn lane function.

Through the Highway 407 corridor area, the centre median accommodates the column placement for the overpass 407 structures.

North of the Highway 7 connecting link, the median will accommodate the approved BRT / LRT ROW in combination with intersection transit stop facilities and mid-block landscaping. The median under these conditions is 11 metre in width.

2.2.3.3 DIMENSIONS

Existing centre left turn lane dimensions are approximately 3.5 metres. Medians configured as centre left turn lanes (i.e., flush with adjacent travelled lanes) will remain 3.5 metre in width.

The median south of Clark is configured as a 5.0 metre median to ensure that protected left turn lanes of 3.3 metres can be provided

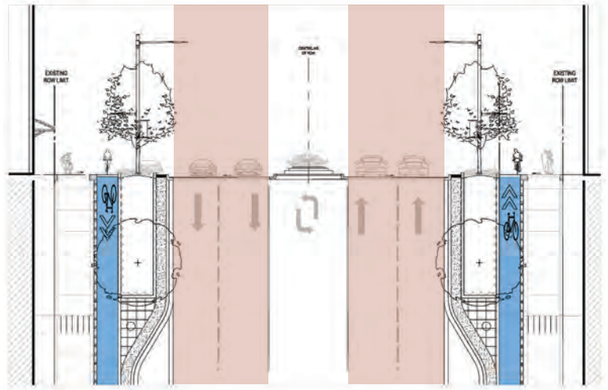


Figure 13: Key Plan

in addition to a median to accommodate traffic signal standards. Located at signalized intersection between Clark and Longbridge will be a 3.0 metre protected left turn lane with a median upto1.7 metre. However, a 3.5-metre-wide left turn lane flush with existing pavement will be implemented at signalized intersections where the 5.0 metres is not feasible.

2.2.3.4 PLANTING

Generally median planters will have a 0.6 metre splash strip on each side, thereby reducing the available volume of planting medium. For instance, if a planter is 5 metres wide, subtract 1.2 metres for splash strips and 0.4 metres for planter walls; the actual planting bed width is 3.4 metres. Planters with available soil volumes of more than 2 metres may house trees; however, less than 2 metres only perennials and shrubs can be used. Plant materials should be chosen to be short enough to not block sight lines near turning points. Planters should all be equipped with a drainage layer, as per the tree pit detail. An automatic irrigation system shall be installed in all planting areas in boulevard and within tree grates.

2.2.3.5 SERVICING

In ground irrigation systems equipped with automatic watering function triggered by moisture sensors and will be installed in any planting beds containing shrubs or perennials. However, drought tolerant species should be chosen such that irrigation will rarely be necessary. Specialty lighting may be used to highlight trees or iconic objects in medians. and be irrigated as per the York Region Drip Irrigation Design Guidelines (2013) and York Region Landscape Design Manual (2018) for the design of future landscaped median irrigation systems.

2.3 BOULEVARD

2.3.1 ORGANIZATION

One of the primary unifying elements along Yonge Street is treatment of the boulevard. This area is located between the curb line and the building / property line and is where pedestrian and cycling activity occurs. The boulevard is intended to provide a safe and accessible area for pedestrians and cyclists.

The boulevard is envisioned to convey the identity of Yonge Street as a streetscape of “links” and “places”. Links are characterized by a consistent palette of design elements and will be found consistently along the streetscape between places; while places will create special events or episodes at numerous locations along Yonge Street. This conceptual approach possesses both continuity and diversity of various elements creating a streetscape of linked districts.

The boulevard includes the Amenities Zone, within which is the Continuity Strip Zone, the Lighting Zone, and the Furnishing and Planting Zone (includes lay-by parking bays), Cycling Facilities Zone, Pedestrian Clearway Zone, and Public / Private Interface Zone.

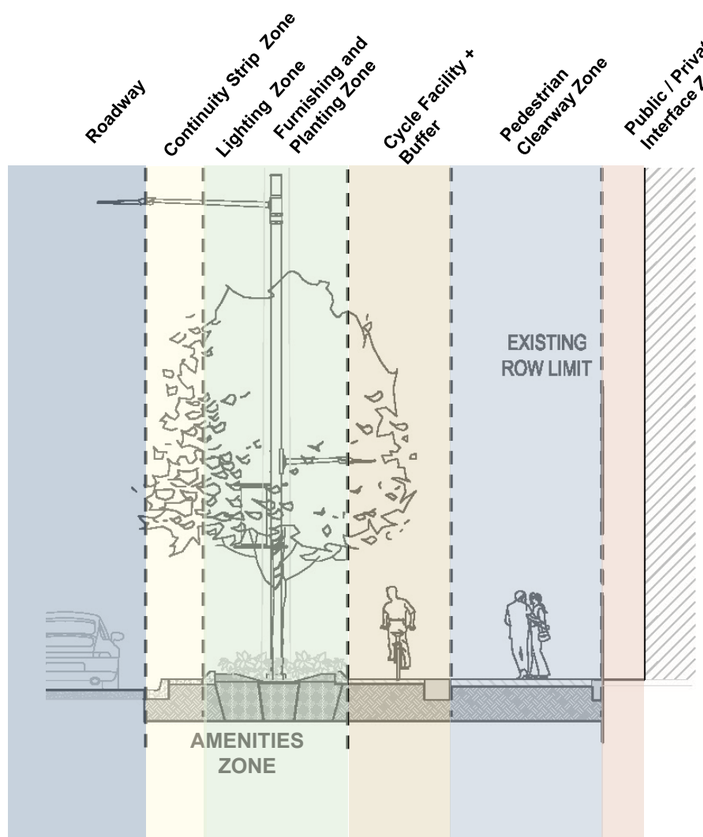


Figure 14: Typical Cross-Section of Boulevard

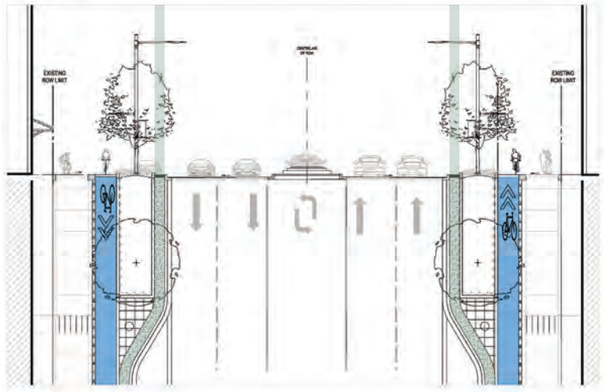


Figure 15: Key Plan

2.3.2 AMENITIES ZONES

2.3.2.1 CONTINUITY STRIP ZONE

The Continuity Strip Zone is the boulevard zone immediately adjacent to the roadway providing a buffer and transition area between the vehicular realm and the pedestrian realm. This zone consists of the curb, gutter and splash pad area. It also provides an area for snow storage and buffering between cyclists and vehicles in areas where the cycling facility is located adjacent the curb. York Region will continue to work with its local municipalities on levels of service and efficiencies on urban corridors and centres.

General Guidelines

- 0.5m-1.0m in width depending on the context;
- Distinctive curb and gutter design shall be utilized; and,
- Splash pads shall be integrated with paving patterns.

2.3.2.2 LIGHTING ZONE

The lighting fixture design and their locations will serve as a consistent link from one end of Yonge Street to the other. The change in grade gives unique views and vistas that can be made stronger and more exciting at night with this line of lights. From the edges of visible environment, the lighting design will support the consistent Yonge Street look. Combined with the other elements, the lighting will reinforce the street as a line of light, stitching the two sides of the street together. Some surrounding areas will have an urban street character with retail shops, restaurants, patios and plazas, while other areas will be bordered with parks and quiet residential spaces. Competent lighting design must anticipate future lighting needs, unforeseen usage changes and the long term growth of a project.

A high degree of coordination is required between lighting and signage. Directional and location signage may be lit internally or remotely and must be coordinated with other lit elements. The location of traffic signals is part of the night light composition and must be considered in the lighting layout.

Energy efficiency is also an important consideration for lighting. It is essential to specify the correct efficient light source that will meet all the visual requirements, thereby helping people to see and feel comfortable without using more light than is absolutely necessary. If the light does not meet these needs it is not saving energy.

General Guidelines

- All lighting standards of the local region and municipalities will apply. The Transportation Association of Canada (TAC) Guide for the Design of Roadway Lighting adds detail and addresses exterior lighting issues. The TAC Guide is useful regarding cut-off lighting and glare control.
- Ensure energy efficiency by using light only where needed for the task, for the periods of time required and use as little as possible. A lighting control system will assist in saving energy by turning lights off and on as required for various functions.
- All lighting shall comply with ASLA SITES, LEED-ND and AODA standards.
- Ideally, these elements should be placed on a separate pole.

SAFETY, SECURITY AND COMFORT

People feel safe and comfortable in a setting where they enjoy attractive light and are not overwhelmed by harsh light that seeks to turn night time into day time. A thoughtful and experienced lighting design will achieve comfort, vitality and beauty, and will be ingenuous in its use of lighting techniques. Night lighting must provide a level of visibility which is suitable for the intended activities in the space. People need to be able to see in all directions to sense danger and to have a feeling of security. The psychological perception of safety is as important as actual protection form danger.

Vertical illumination is essential throughout the streetscape to allow for safe recognition of people for social interaction and the visibility of crossing pedestrian traffic. Facial identity not only helps with a sense of safety, it adds to our comfort and attraction. To see faces well, the light must come from a number of sources at locations above head height so that sharp shadows are avoided and ambient light fills the darker areas. Vertical illumination is critical for drivers to identify pedestrian presence at crosswalks with enough time to react accordingly.

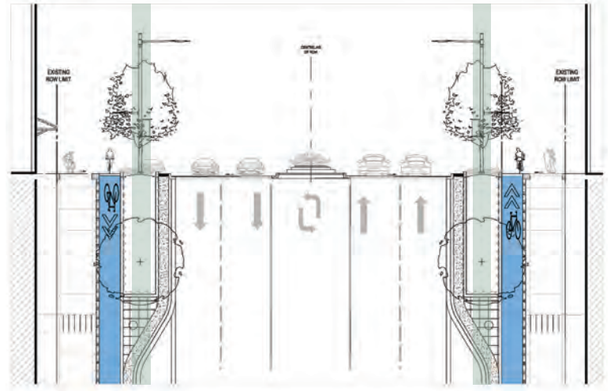


Figure 16: Key Plan

Guidelines

- Full colour, glare free light is required for movement in dark environments.
- Provide adequate vertical illumination levels to avoid shadowing and dark areas.

LIGHTING HARDWARE

The appearance of the light and the lighting hardware can make a unique contribution to the identity of Yonge Street. The lighting hardware and its location will be as constant as possible as a unifying element but there may be variations in Special Character Areas. Those variations should be limited to changes in spacing, additional minor components or interplays with scale.

The shape and colour of the light fixtures; the spacing and clustering of the light sources; and the family of heights and sizes add together to give an identity and memorable “brand” to this special place. Lighting hardware should be chosen from the catalogs of major manufacturers. The availability of a product over a long time period must be considered. It is a good strategy to acquire and store additional fixtures, particularly as LED fixtures are not yet a mature product, and fixtures styles change frequently.

Guidelines

- Choose high-quality lighting hardware from a major manufacturer to ensure for ease of replacement of parts and fixtures, and maintenance considerations.

POLE HEIGHTS AND CRITERIA

Due to the wider streets and a desire for a unified solution, tall lighting poles will have street luminaires on arms at the top and pedestrian luminaires near mid pole. Between each tall pole will be a pedestrian height lighting pole with a luminaire to match the lower luminaire on the tall pole.

At intersections, a greater density of tall poles will likely be necessary to meet illumination criteria. Existing taller poles holding overhead wires will not be combined with lighting poles. Some lighting poles may hold traffic signal and signage but this should be controlled to keep it to a minimum.

Guidelines

- Tall lighting poles shall be around 9 metres high;
- The distance between tall lighting poles should not exceed 36 metres;
- Pedestrian lighting poles shall be between 3.5 to 4.5 metres high;
- Maximum spacing of pedestrian poles should be 18 metres;
- Tall lighting poles should alternate on the street
- Avoid using lighting poles for traffic signals and signage, where possible. Ideally, these elements should be placed on a separate pole.

LUMINAIRE CRITERIA

Luminaires must have excellent optical design, controlling the light to minimize light pollution and maximizing efficiency. Full cut-off lights are not recommended since some luminance of the fixture is required to give it presence from a distance as an object that defines the street.

Guidelines

- A low level of horizontal luminance (1000 - 4000 cd/sm) is necessary;
- Excessive brightness, over 4000 cd/m², must not go above a 65 degree angle from the vertical;
- The TAC Guide for the Design of Roadway Lighting should be followed.

LAMP AND ILLUMINATION CRITERIA

Night light should render colours in a warm, neutral hue. Cool colour temperatures are more efficient than warmer ones, but this efficiency comes with a trade-off in colour quality and the overall look and feel of the streetscape. Cooler colour temperatures of 4000K or higher are not well suited to retail corridors or social interaction. It is recommended that all fixtures be the same colour temperature, both street and pedestrian mounting heights, to provide a consistent and unified appearance.

Guidelines

- Colour temperature should be between 3000 and 3500K;
- The colour rendering index should be over 80;

2. Unifying Elements

- Fixtures should be long life, with a minimum of 75,000 hrs to L70 (70% of initial lumen output)
- Light level must meet regional standards for major streets of 17 lux average illumination and a 3:1 ratio between the average amount and the minimum amount;
- Intersections must be 1.5 times brighter at 26 lux.

BRIGHTNESS, LUMINANCE AND GLARE CRITERIA

It is essential to understand how the eye perceives the effect of light at night. People see the brightness of light reflected from a surface. It is the impact of the relative brightness and relative colour that gives visual recognition. Good lighting design is the management of the relative brightness. Excessive relative brightness becomes glare and restricts ones ability to see. As people move from one space to another, adaptation time is required for the eye to adjust to changes in light quantity. One of the keys to seeing well at night is the relative brightness of the various lit elements. Vertical luminance and luminaire brightness are often more important considerations than horizontal illumination.

Guidelines

- Avoid glare through proper lighting design and fixture approvals.

TRESPASS AND POLLUTION

Light must be carefully controlled so that excessive brightness does not trespass on to adjacent properties, but is controlled and soft. It is desirable to softly illuminate building facades from the streetlighting system to reinforce the buildings as part of the streetscape and reveal them against the night sky. Some fixtures are available with very sharp cutoff optics that allow streetlights to illuminate only the vehicle lanes. These may be desirable for dark residential settings, but should not be employed on Yonge Street. The wide cross section and surrounding built environment favours a soft backlight contribution from the higher 'street' level fixtures.

Guidelines

- Ensure that light is not wasted into the sky contributing to light pollution;
- TAC, LEED and SITES standards shall be followed for light trespass and pollution considerations.

INVITING 24/7 AND 4 SEASONS

Events and seasonal change often require special light, additional light or changes to the lighting hardware to meet the unique requirements. Electrical power outlets are often included in the lighting hardware to add lights for special needs. There is an opportunity in programmed areas to introduce event infrastructures such as trusses or frames to hang event lights, sound, banners and decorative items along with permanent lighting. In a larger composition, special landscape elements, trees or edges of plantings may benefit from special lighting. In most cases, trees and shrubs are best unlit since there growth requires darkness as well as light.

PUBLIC / PRIVATE INTERFACE ZONE

Lighting guidelines for the public / private interface zone should be established and enforced for the private sector to help create a coherent and lively night environment along Yonge Street. Businesses should be educated to leave appropriate lighting on after they are closed, to a night curfew hour when pedestrian activity dies down. These entrance, sconce and display window lights help to make the street comfortable, safe and desirable as a pedestrian destination A benefit of lighting major buildings and features is that they provide nighttime orientation. Building walls can define the enclosure or edge of spaces. They form a backdrop for silhouetting trees, monuments and people. Building entrances and centers of activity should be lit focal points at night. Service entrances should be lit with sensitivity to surroundings. Lighting 'wall packs' should never be used. In addition, the City of Vaughan's Yonge-Steeles Urban Design and Streetscape Study is a very comprehensive study and should also be taken into consideration in this zone in conjunction with above mentioned lighting design guidelines.

CONTROL

Wireless dimming controls are now readily available for exterior streetlighting systems. These allow the fixtures to be tuned to provide only the necessary output, and allow for reporting on fixture operating temperature, hours of operation and equipment failure notification.

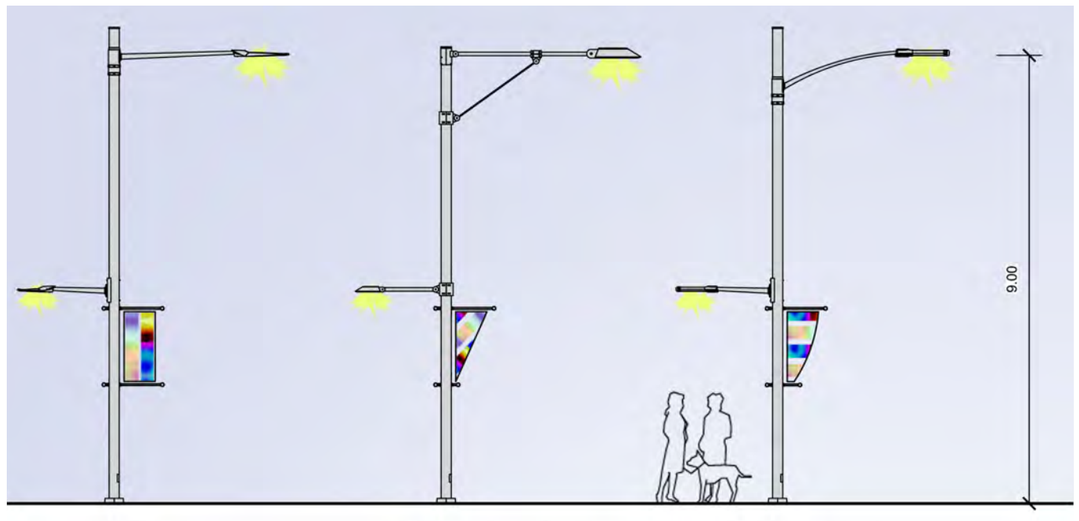


Figure 17: Lighting Pole Options

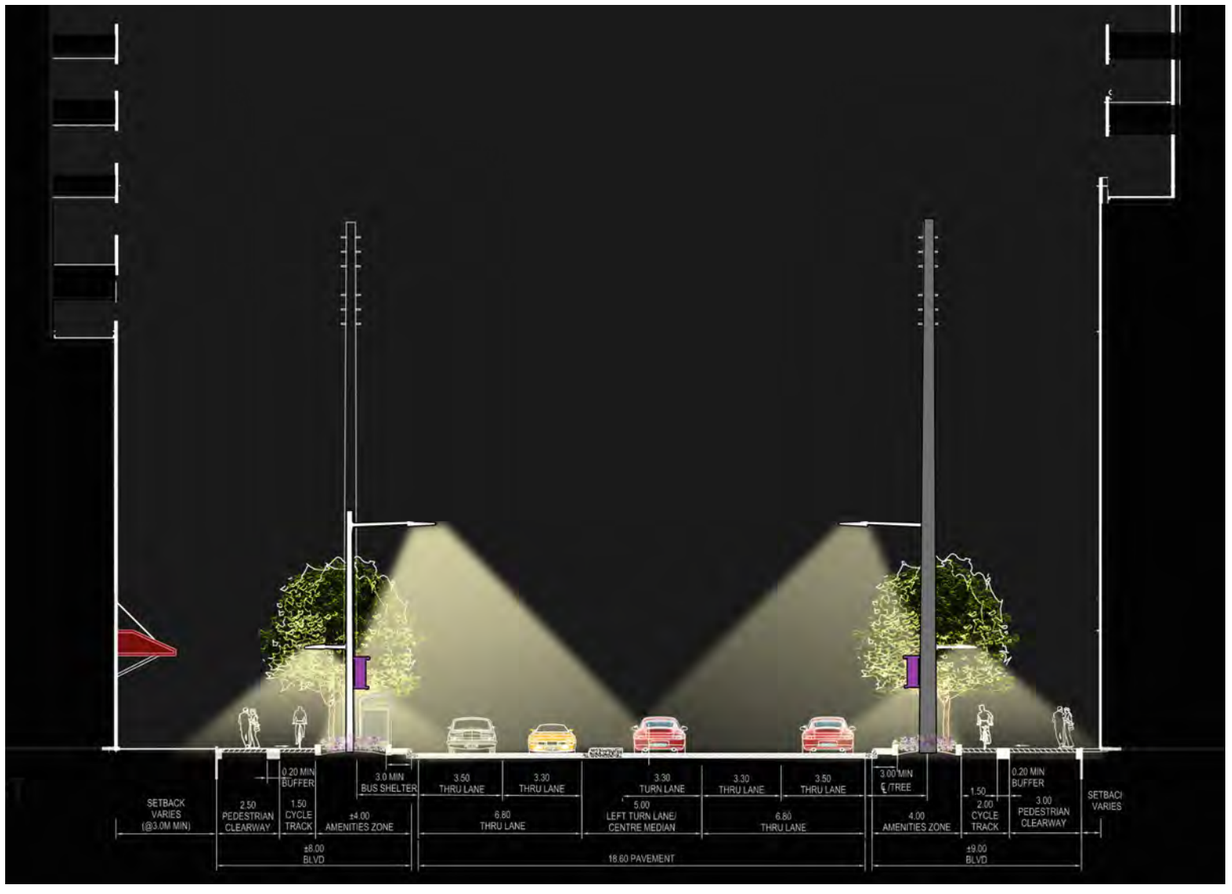


Figure 18: Typical Lighting Cross-Section

2. Unifying Elements

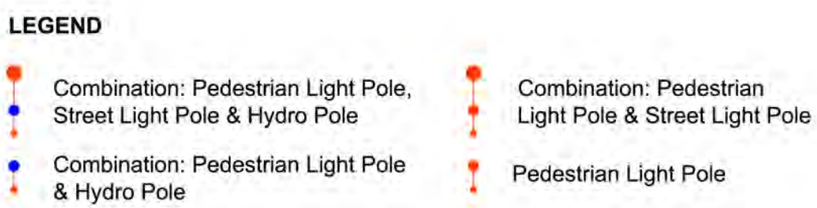
CONCEPTUAL APPROACHES

Two conceptual approaches to the location and integration of streetlights are illustrated.

Concept 1 illustrates the recommended approach utilizing dedicated poles for street lights and pedestrian lights independent of hydro poles.

Concept 2 illustrates another approach where hydro poles are used, where appropriate to mount street and pedestrian lights.

Note: Concept 1 cannot be implemented unless significant financial resources are available.



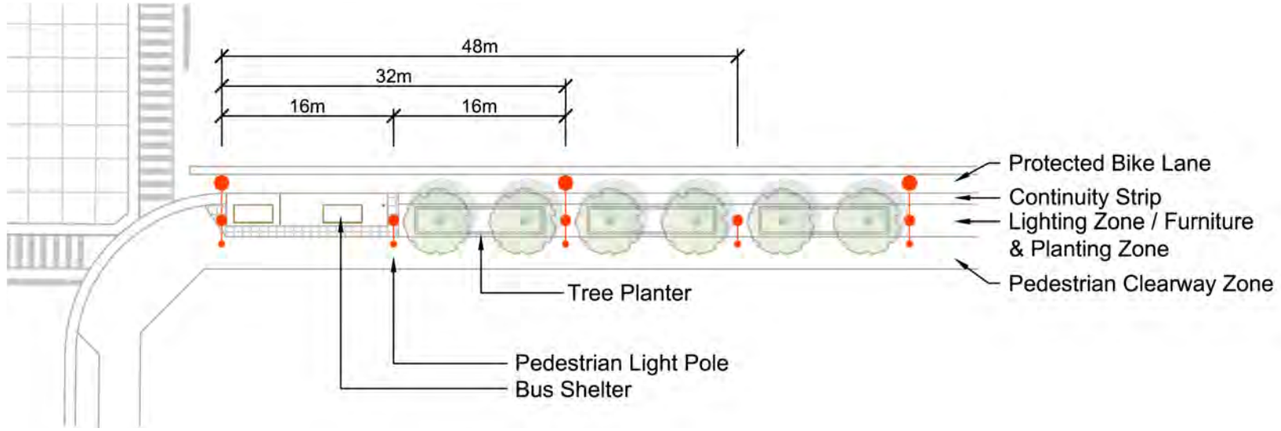


Figure 19: Lighting Concept 1 (Hydro Located Below Grade)

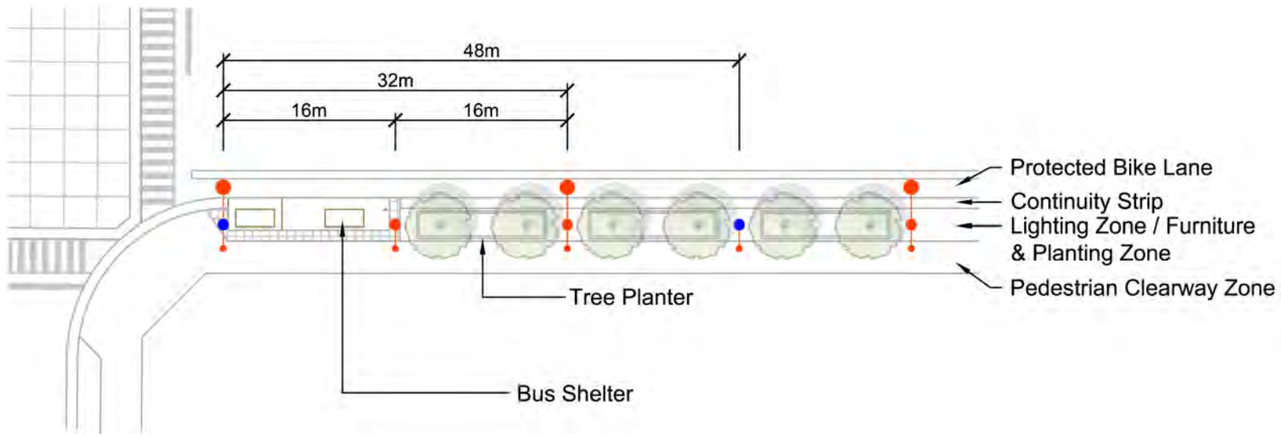


Figure 20: Lighting Concept 2 (Hydro Located Overhead)

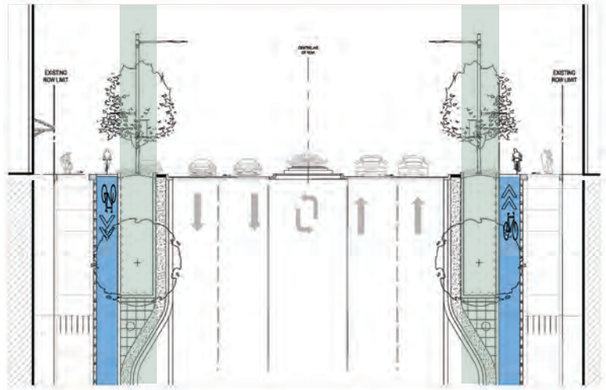


Figure 21: Key Plan

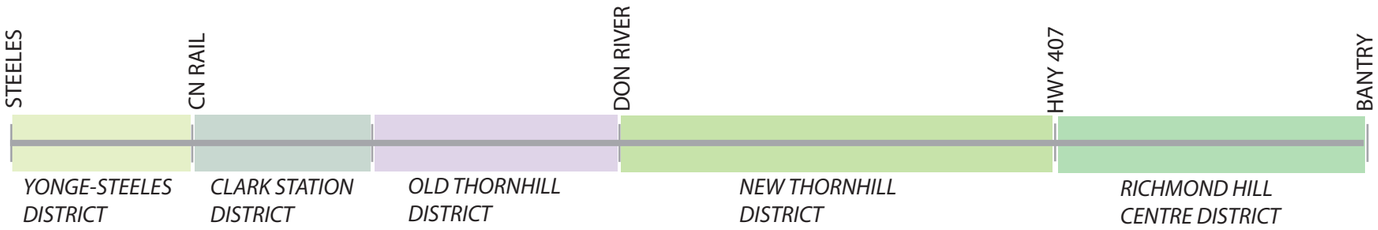


Figure 22: Key Plan

2.3.2.3 FURNISHING AND PLANTING ZONE

Typically, the Furnishing and Planting Zone is located between the Continuity Strip Zone and the Cycling Facilities Zone. This zone will include such elements as shrub and perennial planting and street trees, paving, street furniture, wayfinding and signage. This zone will also include linear paving to provide unification of the streetscape along Yonge Street. Transit stops will be located within this zone. Elements within this zone shall be coordinated regarding location, design styles and material palette for overall streetscape unification along Yonge Street.

General Guidelines

- 4 metres in width (minimum of 2 metres wide), varies along streetscape;
- Surface treatment (whether soft or hard) changes with special character areas.
- All trees in planters and grates are to be a minimum of 2 meters from edge of curb
- All planted medians to have automated irrigation;
- All medians are to meet soil volume requirements for trees as per Region's specifications;
- All planters to have a median wall 350mm for treed medians 200mm for other medians

1. Planting

In 2016, York Regional Council adopted a Forest Management Plan that aimed to maximize the benefits of all trees in the Region, recognize the value of all trees as living, green infrastructure assets, and work to increase the tree canopy cover in all settings. This master plan study will reflect the Regions direction.

Planting in layers will enhance biodiversity and includes such elements as street trees, shrubs, and groundcovers. These elements provide softened surfaces to the generally hard streetscape, and help to distinguish special nodes, plazas and character areas along the street. Street trees, particularly mature ones, can provide shade along the street, creating an inviting and walkable pedestrian environment. It is recommended that York Region's Landscape Design Manual (2018) be used as reference to detail planting requirements and plant material selection that would promote healthy and sustainable growth of trees, shrubs, perennials and groundcovers. An automatic irrigation system shall be installed in all planting areas in boulevard and within tree grates.

Providing for a balance between increasing species diversity to increase plant health, and allowing some mass plantings to create aesthetically pleasing streetscapes is important and consistent with York Region's Street Trees Preservation and Planting Design Guidelines (2013) and Landscape Design Manual (2018). The streetscape philosophy of linked districts for Yonge Street, consisting of links and places, supports the use of different tree species at intersections than those species used mid-block. For instance, the block may be primarily planted with Ivory Silk Lilac (Syringa reticulate) but the intersection is planted with Autumn Blaze Maple (Acer x freemanii 'Autumn Blaze') on all four corners to reinforce a sense of place.

In parkettes, plazas and on property outside the right-of-way (special nodes and highlight features), there is the opportunity to use less urban-tolerant species. However, it is recommended that planting plans should specify a diversity of native tree and shrub species. A cluster of Blue Beech trees (Carpinus caroliniana), for example, can add to a sense of place. Clustered trees are generally better protected and healthier.

The York Region's Landscape Design Manual 2018 suggests that 75% of trees planted be from their list of `Proven Performance Full And Small Form Trees' and 25% from their list of 'Notable Performance Full And Small Form Trees'. However, in the interest of increasing diversity and investigating potentially viable trees species, carefully selected additional species should be planted. See Appendix 1 for additional tree species to consider.

General Planting Guidelines

- Plant in layers using at least three layers, where appropriate – trees, shrubs and groundcovers – in order to offer an increased opportunity for biodiversity and other ecological benefits such as ambient cooling, water retention, water filtration and increase soil health;
- Avoid planting species that may detrimentally affect adjacent sensitive communities;
- Opportunities for creating a greater variety of landscape types (wetlands, meadows, woodlands) should be pursued;
- Reduce the use of turf grass (requires excessive pollution-causing and wasteful maintenance practices);
- Promote the use of Eco-Lawn or equivalent low-growing, low-maintenance, drought tolerant fescue mix. If left un-mowed a public education campaign should be undertaken to increase acceptance. This type of lawn should be mowed once a year to eliminate excess build-up of dead grass that may inhibit spring growth.
- Alternative groundcovers (i.e., native meadow plantings) should be used where possible;
- Avoid the use of invasive species. See list of recommended low-maintenance, urban tolerant species in Appendix 1;
- It is also recommended that York Region's Street Tree and Planting Design Guidelines be applied to ensure conformity;

Figure 23: Selected Acceptable Street Tree Species

- Utilize trees that have been grown locally or within a 500-kilometre radius for at least 3 years (minimum requirement);
- Native tree species, selected from Region's Top Performing List of Trees, are to be used to the maximum extent possible, with a preference for local ecotypes which are more resistant to local pests and environmental conditions while helping to preserve local wildlife. Landscape contractors should specify nursery availability at time of tender to reduce likelihood of substitutions;
- Low-maintenance, salt / pollutant tolerant, native or naturalized species shall be used;
- Utilize plants with extensive root systems to improve soil structure;
- Local schools / community groups should be encouraged to adopt nearby public landscapes to lower maintenance costs increase education and awareness.

Species Diversity Guidelines

- Maximum of 20% of plantings to be from the same genus, and maximum of 10% of plantings to be of the same species (consistent with the York Region's Landscape Design Manual 2018);
- For Yonge Street a minimum of 6 species of trees should be used to enhance species diversity for the Yonge Street corridor;
- One species of trees should be planted continuously on both sides of the street for a distance of between 80 and 130 metres; In the next portion of the streetscape, a species with a similar growth habit should be used;
- Where double row of trees is to be planted, the tree row closer to the road should contain a smaller tree species, as this row will be most subject to environmental abuses from road salt and car fumes and will generally have a naturally shorter life span than a larger species of tree; while the second row shall contain the larger species, ideally affording it better environmental conditions and, thus, longevity and health increasing the value to the community. This strategy provides opportunity to further diversify the planting palette;
- In general, large trees are preferred to smaller species to maximize environmental and social benefits.

Soil Volume Guidelines

- With the incorporation of boulevard planters, the importance of soil volume in hardscapes is paramount. The Region requires a minimum soil volume of 30 cubic metre for a single tree or 16 cubic metre of soil volume with direct access to an additional 14 cubic metre of shared soil volume for 2 or more trees;
- 3 metre wide by 55-centimetre-deep soil trench under suspended precast concrete panels is recommended planting technique for urban, high-traffic areas;
- Soil volume can be achieved through an open planter bed or subsurface soil cells as recommended by York Region's Landscape Design Manual (2018);
- Trenches containing two trees should be 10 metres long and approximately 55 centimetres deep. The same size of planting bed can be used with a 200 mm curb or a 450 mm seat wall treatment for residential or social spaces;
- 200 mm curbs are recommended in areas with lower anticipated pedestrian traffic where increased softscape is possible;
- Where space permits and it is anticipated that pedestrians will congregate, such as in shopping areas, seat wall height planters are desirable to provide more space for socializing;
- For trees in grassed boulevards and unpaved areas, use root paths or structural soils to direct and allow the roots access to additional soil volume under sidewalks, multiuse paths and cycling facilities;
- Tree pit shall be covered by a 2.0 metre square grate with removable rings to accommodate future trunk diameter and tree guard (see Section 2.3.2.4 for tree grate and guard details);

Continuous soil trenches will create shared resources among individual trees and provides a greater area for root growth and

stormwater absorption. This can also prevent pavement heaving adjacent to tree pits and the associated cost of repair and litigation related to tripping injuries. Similarly, the elimination of unwarranted tree stabilization techniques protects trees from future girdling or snapping, while elimination of unnecessary tree stakes or guy wires protects pedestrians and saves installation cost.

Vegetation Preservation Guidelines

It is recommended that York Region's Street Tree and Forest Preservation Guidelines be applied.

Soil Quality Guidelines

It is recommended that York Region's Soil Quality Guidelines be applied.

2. Drainage

In accordance with Low Impact Development (LID) principles, Stormwater, within the streetscape and beyond, should be managed as close to its source as possible. Therefore, all planting areas should be constructed as infiltration beds to absorb runoff from the adjacent sidewalks.

Figure 24, 25 & 26: Precedent Imagery Of Tree Grate, Planting Bed Curb And Seat Wall Treatments

Guidelines

While it is extremely difficult to manage stormwater in an urban built environment, the following guidelines are recommended. Ultimately, this will have to be dealt with on a case by case basis with development and various site conditions.

- Low Impact Development (LID) principles shall be applied throughout the implementation of the proposed Updated SYMP Streetscape;
- Rainwater harvesters / stormwater-capture systems and subgrade drainage shall be utilized to minimize run-off and provide irrigation;
- 5:1 ratio of drainage area to infiltration bed is recommended;
- Infiltration beds should be designed with buffer strips of clear gravel around the perimeter and a substantial drainage layer (clear gravel wrapped in permeable non-woven geotextile and a perforated drain pipe with filter sock) designed to store at least a 3 cm rain event and discharge excess water to larger detention basins;
- Infiltration beds should also provide for overflow;
- Ensure input from different disciplines early in the schematic design phase to assist in identifying potential areas for subsurface infiltration;
- A geotechnical engineer shall be contracted to ensure success of the installation;
- Amend existing soils to increase porosity as necessary;
- Do not use infiltration techniques if there is insufficient depth to groundwater table;
- Collect water from high-pollutant activities and provide water quality treatment measures before runoff areas drain elsewhere.

Design buildings, roads and infrastructure to avoid the removal, grading or compaction of small streams and flow paths. Identify opportunities to disconnect roof leaders and to reduce surface flow to piped sewers. Buildings could direct rainwater to cisterns to irrigate green roofs or gardens during dry periods. Dry wells should also be considered. Take care to avoid compaction of vegetated and lawn areas that receive runoff from downspouts or graded impervious areas. Decompaction of construction sites prior to final grading should be specified in contract documents. A landscape architect should be present at pre-construction meetings to educate contractors on the hydrologic goal for a site and specific procedures required to attain that goal. Minimize impervious surfaces and use pervious alternatives, including green roofs. Use pervious pavements with a sub-base composed of clear gravel (or other recycled aggregates such as glass or concrete) for surface parking areas and provide vegetated swales to manage runoff. Consider winter maintenance requirements: permeable pavement usually requires less de-icing and alternatives to salt should be considered. Pervious pavement should be vacuumed twice yearly to ensure proper drainage is continually occurring.

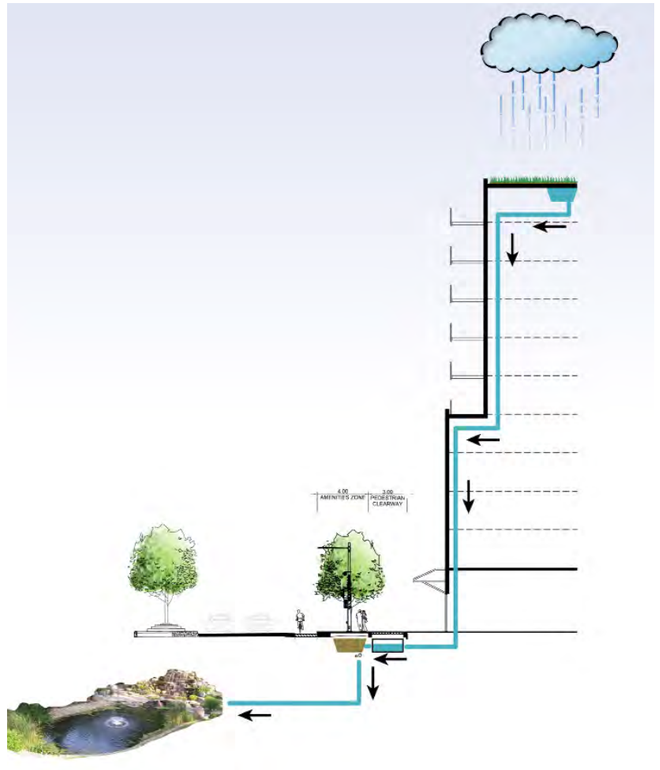


Figure 27: Stormwater Management and Drainage System Diagram

2. Unifying Elements

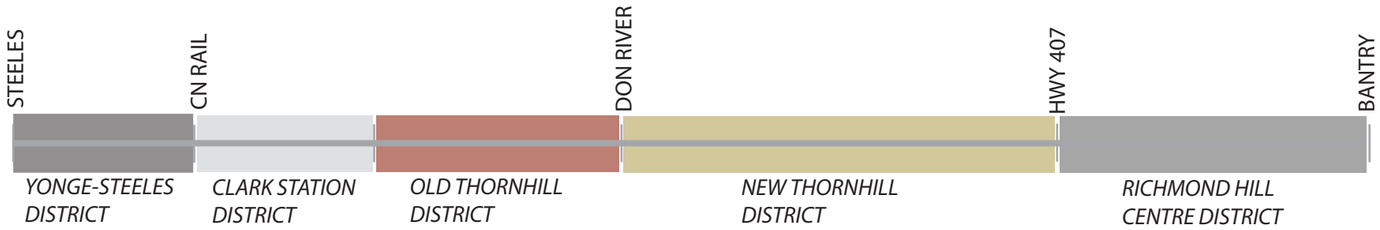


Figure 28: Key Plan

Paving Guidelines Concept - Colour Variations for Special Character Areas

3. Paving

Paving within the Furnishing and Planting Zone shall define the linear quality of Yonge Street, while allowing for the definition of spaces within the special character areas. Continuity is provided by the linear grey pavers throughout the entire length of the study area as well as by the continuity strip (curb, gutter and splash strip) and pedestrian clearway zone paving. Applications of permeable pavers are encouraged wherever feasible. It is recommended that HPB material should be used wherever pavers are used.

Guidelines

- Specialty paving at intersections shall be used to define “places” along the street;
- Groups of dark stripes are designed along all sidewalks to indicate the movement along the street, giving the sense of rhythm and change, and enriching the visual perception;
- Linear unit pavers in neutral grey tones shall be used along length of street, colour variations shall occur within the special character areas to define character and delineate the area;
- Paving at subway station entrances shall define the entrance space and imitate the sense of movement that occurs at these points through varying paving patterns and designs;
- Clark subway station shall utilize diagonal stripes and circular planters to indicate the station as a transit node, provide a striking visual identity, while directing people to the station entrance.
- Colour of the cycle track shown in this report is conceptual. Actual colour is green as indicated in Phase 4B Report.

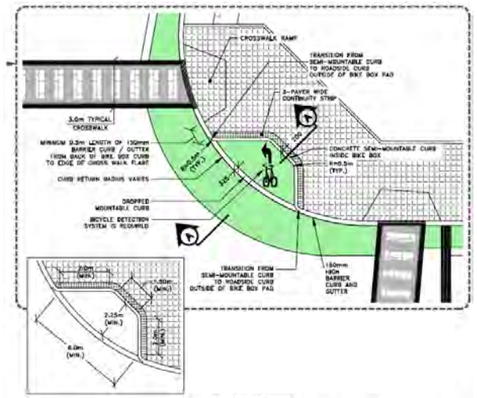


Figure 29: Typical Bike Box D-10.04. Source: York Region Pedestrian & Cycling Planning & Design Guidelines

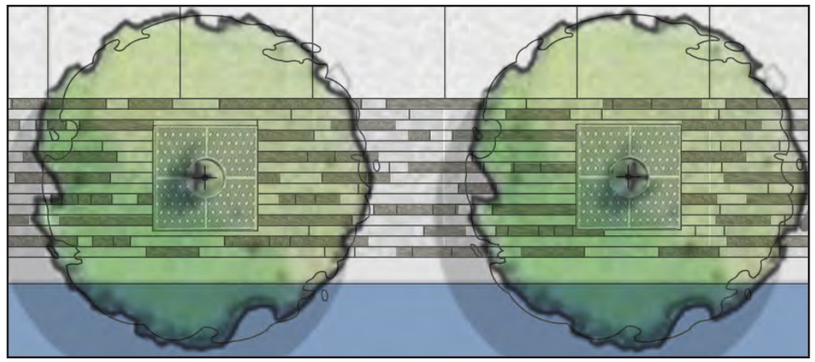


Figure 30: Paving Detail

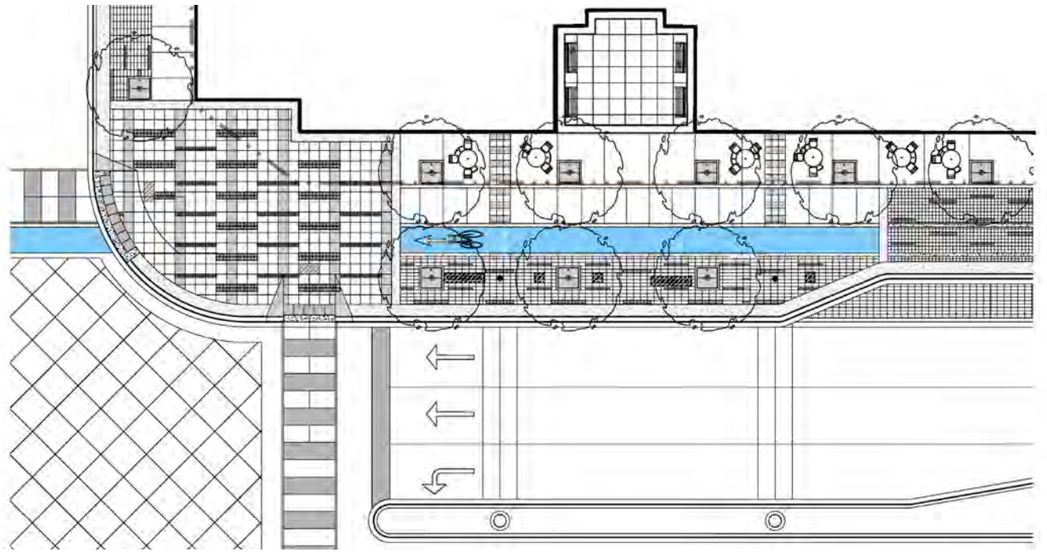


Figure 31: Paving Variations and Locations

2.3.2.4 STREET FURNITURE

Street furniture includes elements such as benches, bicycle racks, bicycle Shelters, litter and recycling receptacles, newspaper boxes, etc. These elements complement the street by providing a comfortable pedestrian scale environment. Street furniture shall be strategically located within the pedestrian realm to enhance their function and convenience while complementing the needs of all users.

Guidelines

- Street furniture shall be coordinated with YRT / Viva furniture as well as street lighting;
- Transit shelters require both electrical service and in certain locations fire optic data connection to provide for programmable and interactive technologies.
- The range of furniture should be kept minimal to reduce visual clutter and create a unified streetscape through theme and colour palette;
- The placement and arrangement of furniture within this zone should enable safe use of the street by all users as well as reinforce the streetscape design;
- Street furniture shall be coordinated in a consistent design style and material palette to unify the streetscape;
- Street furniture shall be in accordance with the Accessibility for Ontarians with Disabilities Act Standards (see Section 7 for details) to ensure barrier-free access is provided;
- All furnishings shall be in accordance with York Region standards and be low maintenance, vandal resistant and easily replaceable.

Benches shall be durable and be made of wood with brushed aluminum. Benches should typically be long enough to accommodate 2-3 people comfortably, and should have backs and arm rests.

Bicycle racks shall be durable with embedment mounting, and strategically located at entrances of subway stations, access points to parks and open space, entrances to community facilities as well as along the length of Yonge Street.

Litter and recycling receptacles shall be of a consistent design style, be equipped with plastic liners, have rain proof tops and be easily accessible for emptying.

Newspaper box enclosures shall be located in convenient locations at high-volume pedestrian areas, such as entrances to subway stations or at major intersections along Yonge Street.

Figure 32: Street Furniture Elements

2. Unifying Elements

Other elements designed to complement the program of street furniture include tree grates and railings. These elements shall be of a similar finish and palette to ensure consistency of design along the streetscape.

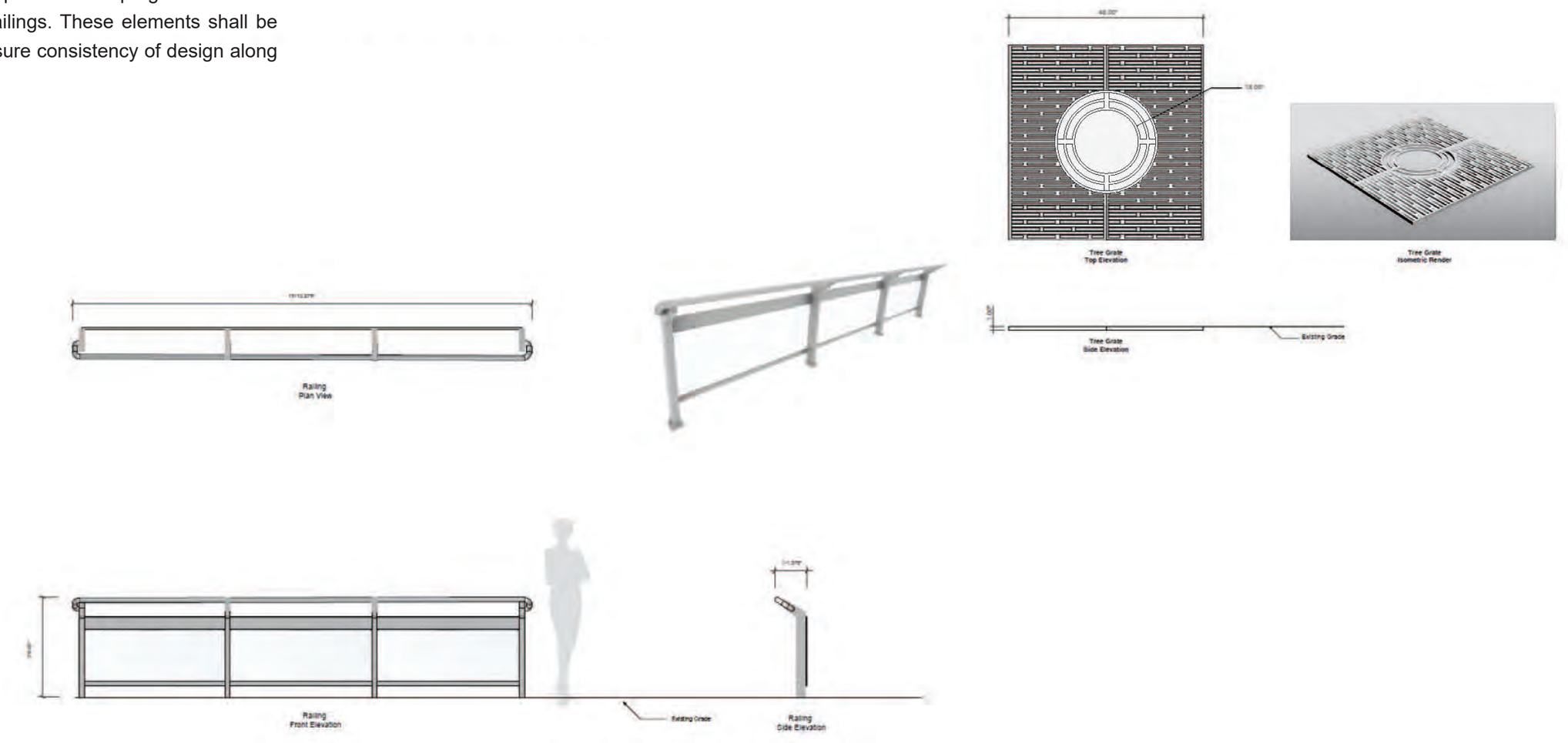


Figure 33: Railing and Tree Grates Examples

2.3.2.5 WAYFINDING, SIGNAGE AND GATEWAYS

Wayfinding and signage amenities along Yonge Street include elements such as gateway features; vehicular directional signs; primary intersection and mid-block street identification signs; pedestrian finger blade signs; pedestrian map orientation graphics; interpretive signs; and regulatory signs. These elements will serve to reinforce a sense of place and identify for residents and visitors alike.

Gateway features are intended as visual landmarks to welcome the community and visitors to a larger-scale district or precinct. These gateway features are intended to be bespoke visual expressions that will coordinate with the design of the place and character of that specific area to add variety and enhance the public realm of the Yonge Street corridor.

Guidelines

- Signage and wayfinding elements should be installed visibly to pedestrians and motorist and be 0.5m away from the curb to prevent road plows from damaging;
- Signage and wayfinding elements shall be of a consistent design style and material palette as street furniture;
- Wayfinding and signage elements shall be durable, low maintenance and vandal resistant;
- All wayfinding shall utilize extruded metal poles as a common basis for signage modules.
- Gateway features will identify a major district or precinct and provide important arrival points along Yonge Street in a manner that adds visual distinction.
- Gateway features will be larger-scale elements that are carefully planned and coordinated with surrounding architecture and landscape to achieve an integrated approach.
- Technology, lighting and innovative use of materials and finishes that enhance the public realm and streetscape experience are essential to the success of Gateways features.

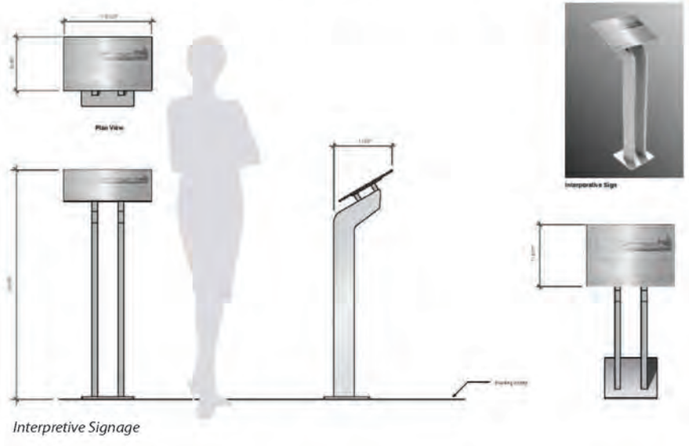
Precedent Example 01

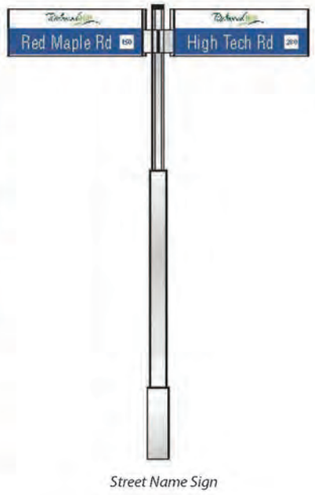
Precedent Example 02


Precedent Example 03

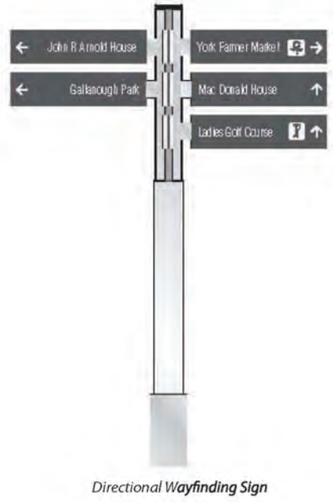
Precedent Example 04

Orientation Sign

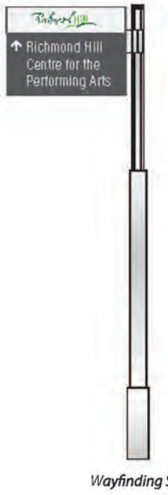

Interpretive Signage



Street Name Sign



Directional Wayfinding Sign



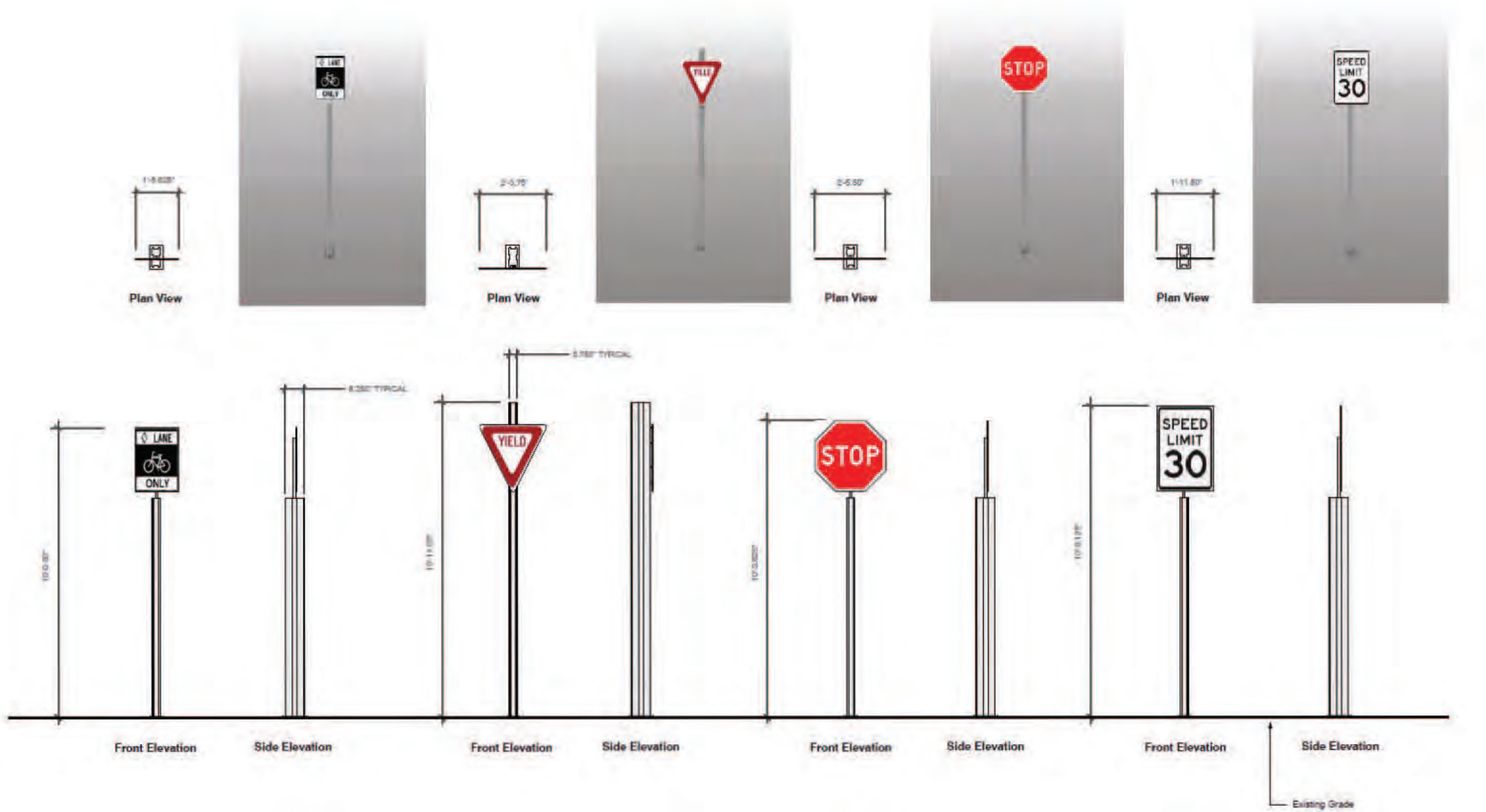
Wayfinding Sign

Identification Sign

Figure 34: Wayfinding Elements

2. Unifying Elements

Figure 35: Regulatory Signage



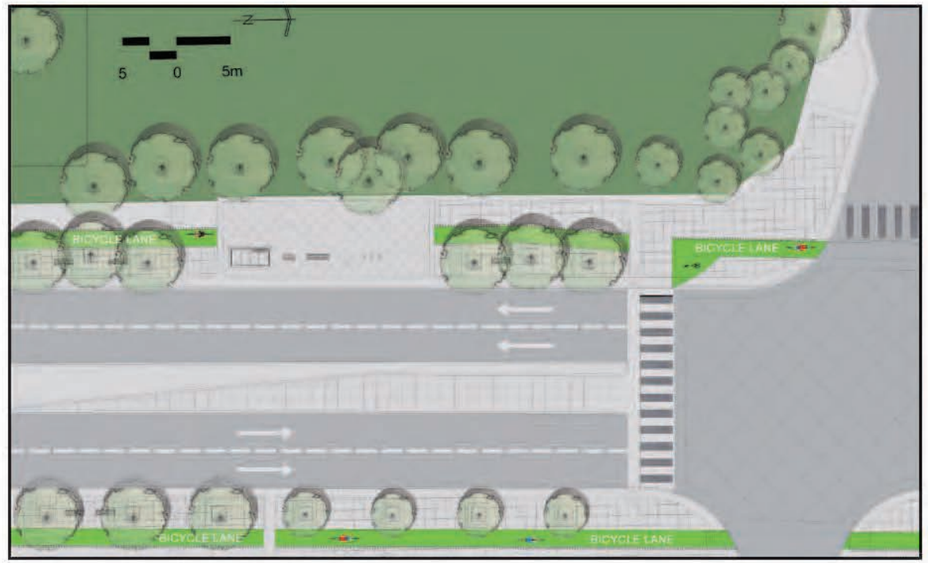
2.3.2.6 TRANSIT STOPS

Transit stops shall typically be located at the far side of an intersection in order to help facilitate the ow of tra c along the street and minimize con icts between right turning vehicles and buses. These stops include the placement of such elements as transit shelters, benches, litter and recycling receptacles, bicycle racks, and newspaper boxes. These areas provide an area for pedestrian interaction as well as a rest node along the streetscape. Transit stops will be strategically con gured to ensure accessibility for all users.

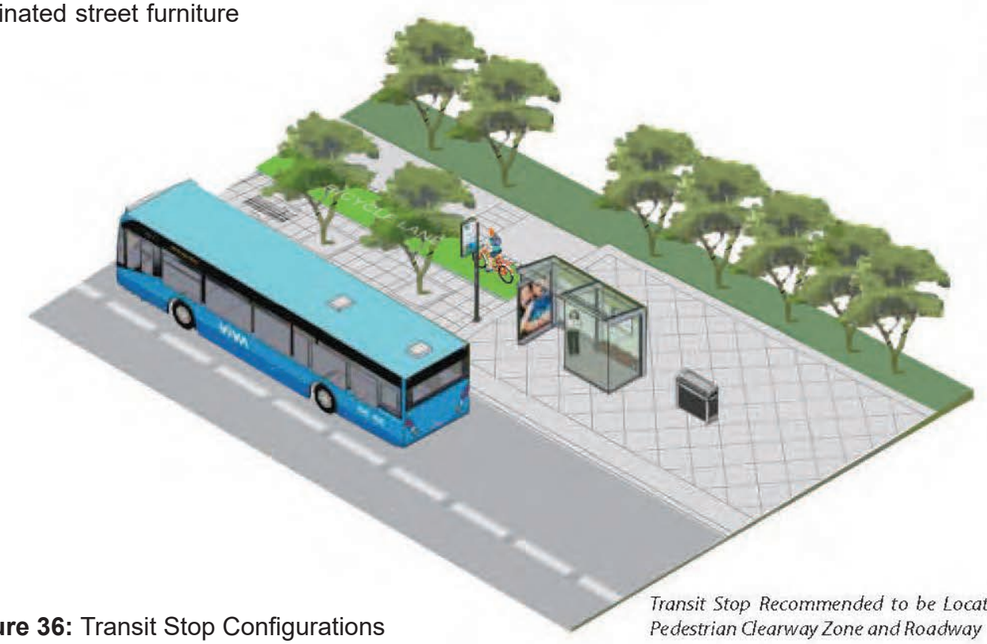
Guidelines

- Transit stop furniture con guration shall be in compliance with YRT / Viva • standards as well as the Accessibility for Ontarians with Disabilities Act Standards for furniture placement;
- Transit stops shall utilize YRT / Viva coordinated street furniture program.

Recommended Transit Stop Layout



Transit Stops Located at Far-Side of Intersections



Transit Stop Recommended to be Located between Pedestrian Clearway Zone and Roadway

Figure 36: Transit Stop Configurations

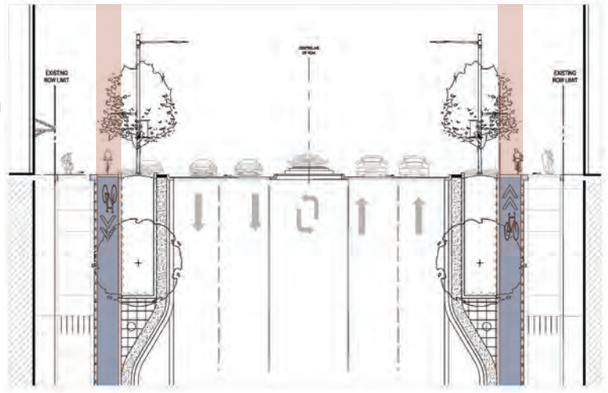


Figure 37: Key Plan

2.3.3 CYCLING FACILITIES

Cycling facilities are provided in three (3) general typologies. These cycling facilities provide a safe riding environment for cyclists of all ages and abilities:

1. Type 1: On-boulevard cycle track – located between the Amenities Zone and the Pedestrian Clearway Zone fully separated from vehicular traffic, providing for unidirectional off-street bicycle travel;
2. Type 2: Raised cycle track – located between the Continuity Strip and the Amenities Zone, this facility is fully separated from vehicular traffic by a raised curb and buffer strip that is within the Continuity Strip Zone;
3. Type 3: Combined Path with distinct model zones – a combination cycle-pedestrian pathway located within the boulevard and separated from through traffic by the Amenities Zone. This facility provides dedicated space for both cyclists and pedestrians in a confined ROW condition.

General Guidelines

- Type 1: Maximum width of 2.0 metres composed of a single cycle lane at 1.5 metres wide and having an additional buffer of a minimum 0.2 to a maximum 0.5 metres adjacent to the Pedestrian Clearway Zone, in each direction of travel;
- Type 2: Raised cycle track—Maximum width of 2.0 metres composed of a single cycle lane at 1.5 metres wide and having an additional buffer of minimum 0.5 metres shared within the continuity zone, in each direction of travel;
- Type 3: Maximum width of 4.0 metres with a single cycle lane of 1.5 metres width and additional buffer of a minimum 0.2 metres delineating the adjacent Pedestrian
- These facilities shall be drained at an average of 2% slope towards the Furnishing and Planting Zone, with street trees and planting utilizing the filtered runoff for irrigation purposes;
- Finished surfaces of cycling facilities shall be smooth and consistent in texture such as Street Bond CL as indicated in the Detailed Design Guidelines Report;
- Colour of the surface of cycling facilities shall be visually distinctive from that of the Pedestrian Clearway Zone. It is indicated in the Phase 4B Report that the colour shall be green.

2.3.3.1 FACILITIES AND POTENTIAL LOCATIONS

During the conceptual design stage, options of the potential cycle facility arrangements within the corridor were undertaken with configurations ranging from raised cycle track along the Continuity Strip Zone in Concept A, On-Boulevard Cycle Track in Concept B and Combined Configuration as noted above for Concept C. Concept C was selected as the Preferred Concept as widths of existing ROW vary throughout the study corridor. Detailed locations of cycling facilities are illustrated in cross-sections in Section 4.

Note: The colour of the proposed bicycle lanes is conceptual, the final colour and material selection should be based on a range of factors that will include durability, colour recognition, accepted standards and cost, and will be determined through future design.

Figure 38 & 39: Precedent Cycling Facilities in the Greater Manchester Area, UK.

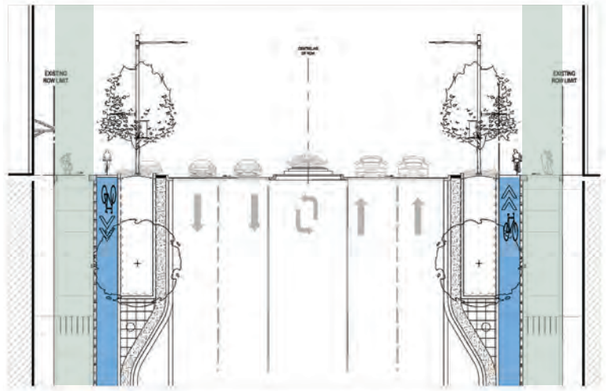


Figure 40: Key Plan

2.3.3.2 DIMENSIONS

Recommended cycling facilities throughout the corridor take the form of a maximum width of 2.0 metres including a buffer strip ranging from 0.2 to 0.5 metre. For detailed width and location information refer to cross-sections in Section 4.

On-street parking would be located behind the curb and gutter configured within parking bays. The cycling facility will be protected by 2.5m lay-by parking bay with minimum 0.7m “dooring zone” from cycling facilities and by min 0.2m buffer strip adjacent to Pedestrian Clearway.

Transit shelters and waiting areas will be located adjacent to the curb with the cycle facility moving behind them separated by a minimum 0.5m buffer.

2.3.4 PEDESTRIAN CLEARWAY ZONE

The Pedestrian Clearway Zone is the area immediately adjacent to the Furnishing and Planting Zone. This zone facilitates the safe movement of pedestrians. An unobstructed barrier-free continuous sidewalk will accommodate the flow of pedestrians. This zone will utilize specialty paving to identify and distinguish the various special character areas along Yonge Street.

General Guidelines

- Typically, 3 metres in width;
- Natural PIP concrete with saw cut and expansion joints to form reduced panel design shall be used along length of street;

2.3.4.1 PAVING

Paving within the Pedestrian Clearway Zone will be primarily natural concrete along the length of the street, with periodic banding across boulevard that will add richness to the poured-in-place concrete boulevard and highlight light pole locations and / or special areas, etc.

2.3.4.2 DRAINAGE

The Pedestrian Clearway Zone shall be drained towards the Furnishing and Planting Zone, with street trees and planting utilizing the filtered runoff for irrigation purposes (see Section 2.4.4.2 for drainage details).

2.3.4.3 UTILITIES

Wherever financially feasible, utilities that are most likely to require upgrades or repairs shall be located underneath the sidewalk at appropriate depths, accessible by access holes or vaults for ease of access for maintenance and operational purposes.

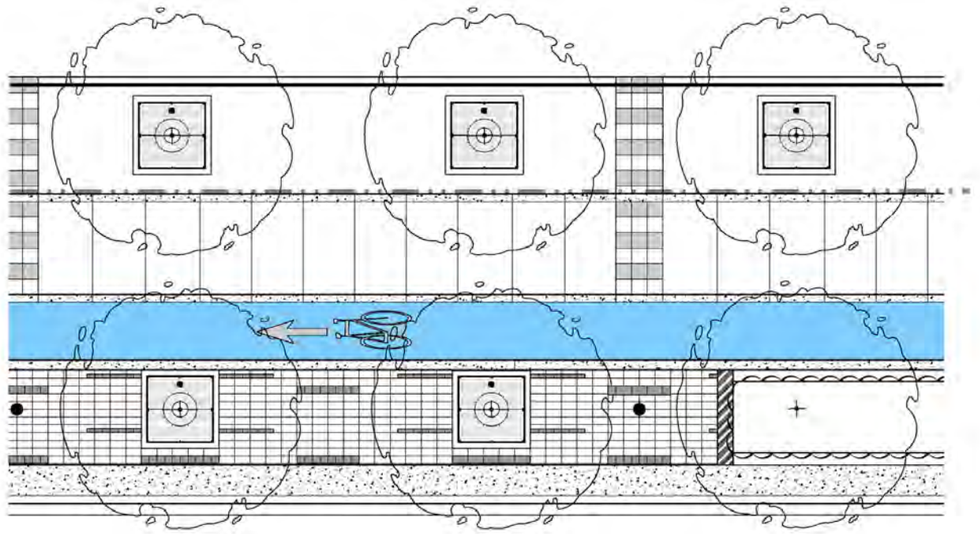


Figure 41: Pedestrian Clearway Zone Location in Boulevard

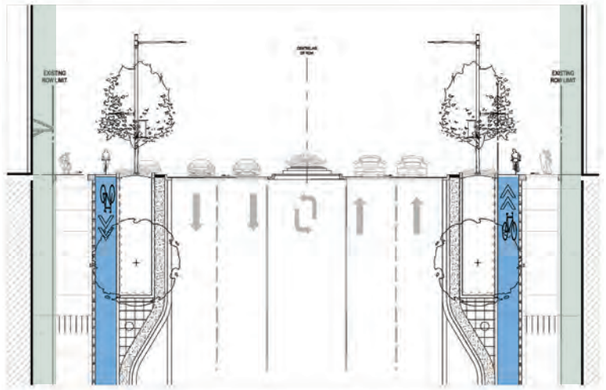


Figure 42: Key Plan

2.3.5 PUBLIC / PRIVATE INTERFACE ZONE

The Public / Private Interface Zone is the area immediately adjacent to the Pedestrian Clearway Zone up to the building / property line. This zone can be integrated with the entrances for building, outdoor cafes, marketing display areas, and landscaping, etc. In addition, the City of Vaughan's Yonge-Steeles Urban Design and Streetscape Study is a very comprehensive study and should also be taken into consideration in this zone in conjunction with above mentioned lighting design guidelines.

A variety of land uses are proposed for Yonge Street, each with different frontage needs and requirements; therefore, this zone will become adaptable for all types of land use. These land uses may include retail uses - where retail is present at grade, residential uses, office commercial uses, public spaces and subway entrance.

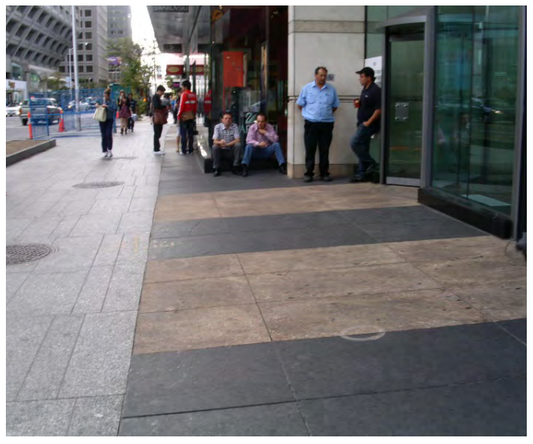


Figure 43: Precedent Image - Office Commercial / Residential Interface

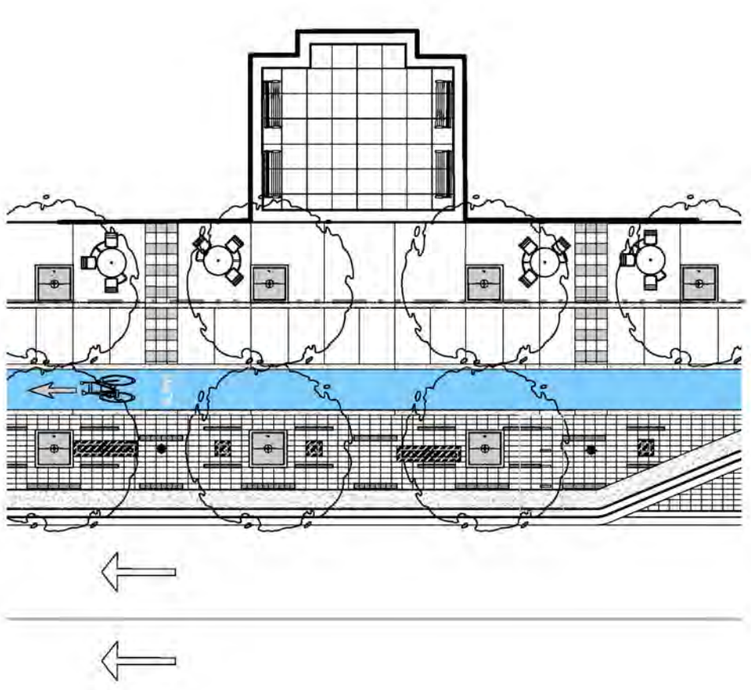


Figure 44: Office Commercial / Residential Interface

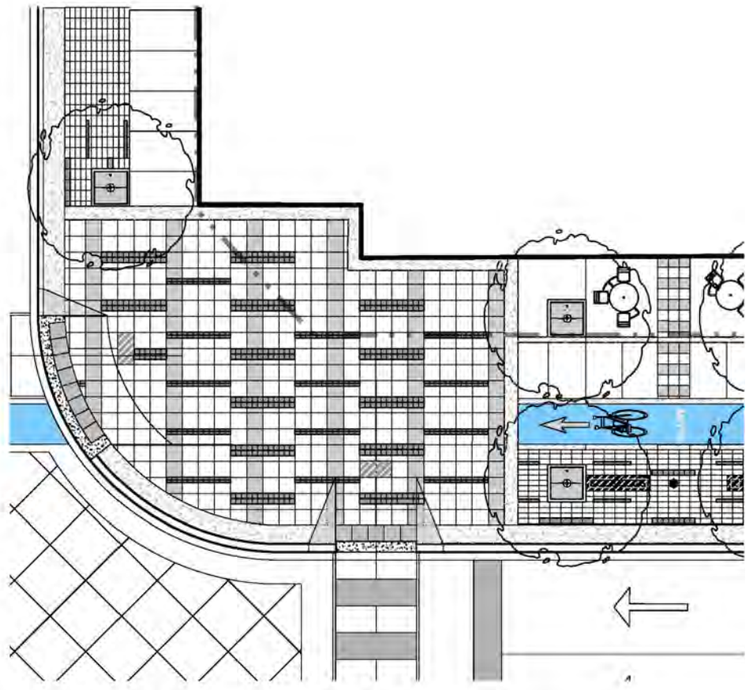


Figure 45: Subway Entrance Interface

2.3.6 PARKING

Parking on Yonge Street, where provided, is located directly adjacent to the curb in designated parking bays or lay-bys. On-street parking shall be located in selected areas to support street life and retail activity along the street.

General Guidelines

- Generally, 2.5 metre in width;
- Location of on-street parking shall be assessed on a block-by-block basis;
- Where appropriate, lay-by parking shall be located in mid-block locations only;
- On-street parking lay-bys shall be configured in 3 vehicle (maximum) groupings to minimize the impact on boulevard urban design elements;
- 45-degree curb tapers with 3 metre curb radii shall be located at both ends of the designated lay-by lane;
- Location shall take into account, but not be limited to adjacent land use, location of light and utility poles, boulevard, tree placement, street furniture, public art and fire hydrant / utility access requirements;
- Specialty paving shall be utilized in parking bays to emphasize the district character;
- Provide a buffer between the layby and the cycling facilities to provide a “door clearance” zone.

2.3.6.1 FACILITIES AND POTENTIAL LOCATIONS

On-street parking within the study area corridor is configured in the form of parking bays, located behind the curb and gutter, inset into the furnishing and planting zone. The location of on-street parking within lay-bys would be established on a block-by-block basis and would be influenced by (but not limited to) adjacent land use type and intensity, private driveway locations, proximity to public street intersections, block lengths, the location of utility poles, boulevard tree placement, street furniture, public art, and fire hydrant/ utility access requirements.

A preliminary review of potential on-street parking within the study area corridor indicates that something of the order of 180 spaces may be possible throughout the corridor, taking into account both sides of the street. On this basis, on-street parking will not be providing a strategic amount of parking relative to corridor needs, rather it will contribute to the urban look and feel of the corridor and offer convenience parking associated with specific street related land uses. Additional parking locations could be explored on a site-by-site basis, where additional RoW is available which can facilitate the shifting of cycling and pedestrian facilities to accommodate parking laybys. This assessment can occur in concert with adjacent development applications.

2.3.6.2 DIMENSIONS

On–street parking is recommended at 2.5 metres in width and configured in maximum 3 vehicle “groupings” to ensure that the boulevard dimensions and streetscape elements are not unduly affected by long runs of street related parking. The parking bays would typically slope towards the curb and gutter located between the parking and the traffic lane. Parking stall length dimensions should reflect a longer middle parking space given entry and exit manoeuvring requirements, however the end parking spaces can be standard lengths, given the geometric configuration of curbs (45-degree curb tapers with 3 metre curb radii) leading into and out of the parking bays.

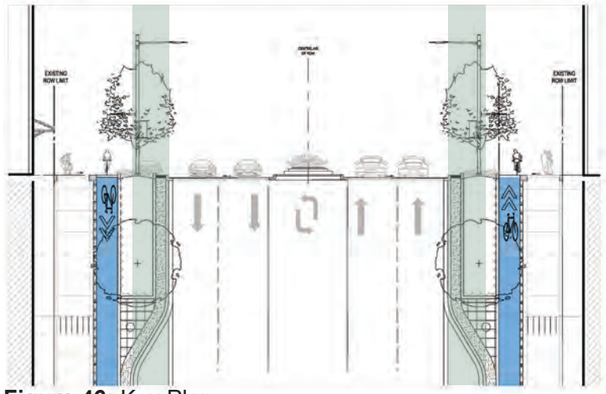


Figure 46: Key Plan

Figure 47: Lay-by Parking is located in-line with the Furnishing and Planting Zone

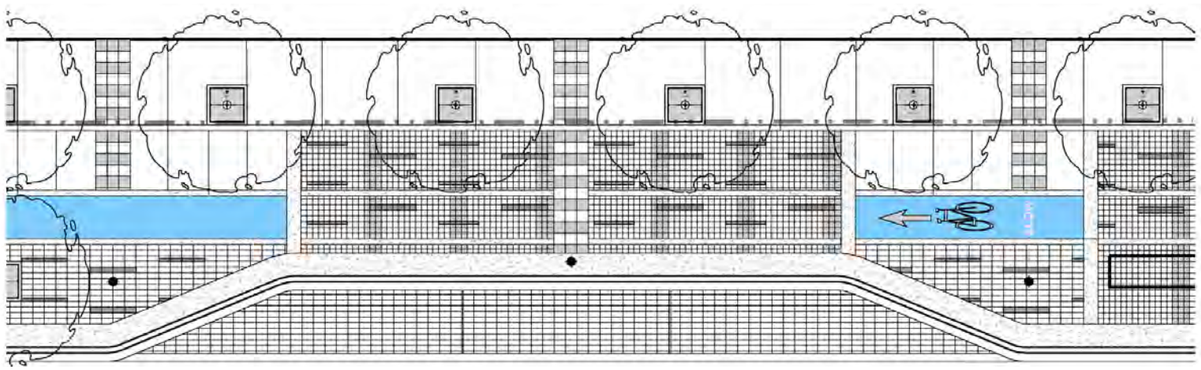
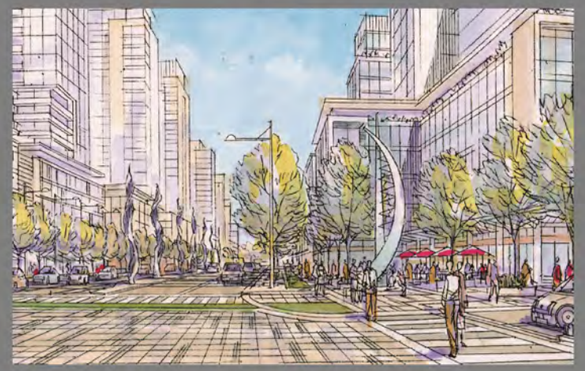
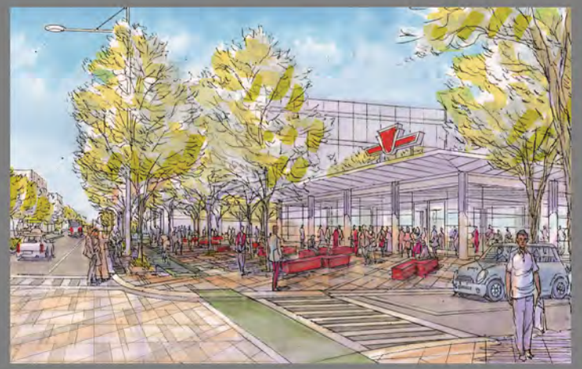


Figure 48: Typical Lay-By Parking Bay in-line with Furnishing and Planting Zone





3

URBAN DESIGN CRITERIA AND REQUIREMENTS

3. Urban Design Criteria and Requirements

3.1 URBAN DESIGN HARMONIZATION

3.1.1 PURPOSE

The purpose of the Built-Form guidelines set-out in this document is to create a strong, cohesive and vibrant 'frame' for the active public realm envisioned on Yonge Street as its development is intensified.

3.1.2 PREVIOUS STUDIES

As stated in the 2012 SYMP, various multiple Municipal studies completed that focus on various stretches of the South Yonge Street Corridor have been completed. However, other than the new Yonge and Steeles Secondary Plan and Streetscape Plan currently undertaken by the City of Vaughan, no new studies have been completed since 2012. The 2012 guidelines set out in these studies remain to be a result of detailed analysis of the subject areas (which include built form in one way or another) as they are described in Official Plans, Provincial Policies, Conservation Studies and Community Consultations. These studies put forward good urban design practices focusing on intensifying development along Yonge. However, their study areas have focused very much within their own Municipal boundaries without putting into the context of the entire South Yonge Street Corridor as a whole. The guidelines set out within the 2012 SYMP document have established commonalities between these studies and propose a unified strategy for built form as it is expressed along the length of the South Yonge Street Corridor.

As documented in the 2012 SYMP, the following definitive characteristics of built-form have been singled out as the most potent in their ability to shape the street environment. Each will be outlined in terms of how they have been defined in relation to the context of the South Yonge Street Corridor.

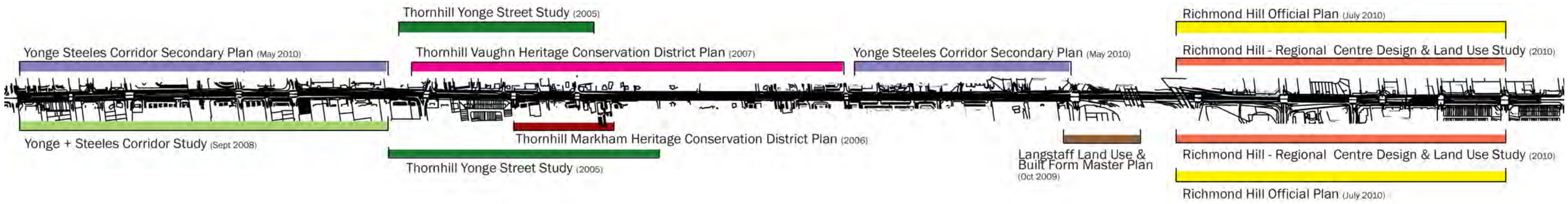


Figure 49: Previous Urban Design Studies within Study Area

3.1.3 STREET WALL

The street wall is the portion of the built form that directly addresses the street. Its height and materiality can be manipulated to give a specific scale to the street and is therefore the most palpable contributor to the quality and definition of the pedestrian realm. The height and scale of the street wall as proposed in these guidelines, encourages a consistent height on either side of the street so as to create a balanced and cohesive frame for the public realm. While the overall maximum allowable height for the built-form along Yonge covers a very wide range as set out by the various Municipalities - 30 storeys in the Steeles area, up to 8 storeys in Thornhill and 15 storeys in Richmond Hill - the height of the street wall as it responds to these contexts is proposed to undergo a more subtle shift in scale (i.e. 6-8 at Steeles and Clark, 3-5 in Old Thornhill, and 4-6 in New Thornhill and Richmond Hill) so as to provide the pedestrian realm with a more consistently human-scaled frame for the activity on the street.

Street walls are encouraged to be parallel to the street and should be articulated so as to avoid large flat vertical planes as these can become monotonous and overbearing for the pedestrian realm. A lot of good work in the various Municipal Studies has been done that focuses on how the street wall can be articulated and it is recommended that these be looked at depending on what character area a new development is in. The “Thornhill Yonge Street Study, 2005” in particular should be of interest for any development in the Old Thornhill area given its sensitive historical context.

Figure 50 & 51: Street Wall Precedent Imagery Area

3.1.4 BUILDING MASSING

As a general rule height (and especially high-rise portions of developments) are encouraged at corner sites so as to give emphasis to intersections and definition to the development.

The dimensions of the required step backs above the street wall are set so as to ensure that a 45-degree angular plane from the minimum boulevard is maintained for the base building. This prevents the pedestrian realm of the street from feeling over-shadowed by excessive massing. These step backs also provide for a generous zone in which balconies could be placed. Balconies should be viewed as yet another opportunity to bring life to the street and are generally encouraged along Yonge.

Figure 52 & 53: Building Massing Precedent Imagery

3.1.5 BUILD-TO AND SETBACK

The proposed narrowing of the Roadways to provide wider boulevards along Yonge Street is a new addition to the parameters of the street that had not been incorporated into previous studies. This narrowing introduces the opportunity for developing a more intimate and pedestrian friendly scale to the building form along this stretch of Yonge. To encourage this, the build-to and building setbacks in the proposed guidelines are in place to encourage development to position itself in a closer relationship with the pedestrian boulevard.

While an ultimate and ideal Right-of Way is proposed for the South Yonge Street Corridor, the reality is that in some areas this dimension will change to respond to the character areas of Yonge as well as some existing conditions that might require the Right-of-Way to alter slightly in response. With this in mind, the build-to and setbacks proposed along Yonge Street are established from a minimum boulevard depth as opposed to the Right-of-Way. This will ensure the placement of any new street wall in a close and parallel relationship with the street, while maintaining a consistent public boulevard.

The percentage of the frontage that should be within the build-to zones proposed as well as the percentage of the ground floor that should be glazed is a critical variable that should be looked at more closely in the context of the specific character area any future development will be built in.

3. Urban Design Criteria and Requirements

3.1.6 STREETSCAPE ZONES

The relationship of the streetscape development (taken as any materials applied to the ground from the curb line to the outside edge of the minimum boulevard width) to that of the open space of adjacent privately owned land is a material one. All development in which the street wall is set back from the minimum boulevard width is encouraged to match the material of the streetscape development within the bounds of their property up to the edge of their building façade along Yonge Street. Should their landscaped area adjacent to the boulevard be of significant area such as a plaza, parkette or courtyard, some variety in material is encouraged, however, the material palate should be carefully chosen so as to compliment the material of the streetscape.

3.1.7 GROUND FLOOR

The at-grade uses of the buildings along Yonge Street will greatly influence the type, number and regularity of pedestrians that will be occupying the public realm of the street.

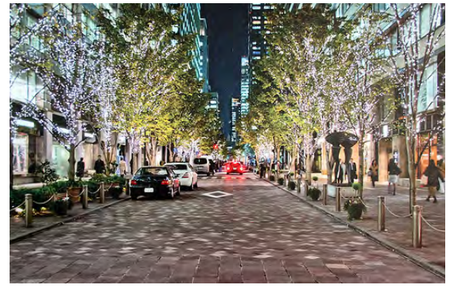
Figure 54 & 55: Ground Floor Precedent Imagery

In order to encourage an active public realm, mandatory retail uses are outlined for all development from Steeles to just south of the CN Rail bridge, while north of the bridge 'active uses' will be required. In order to facilitate these active uses at grade, it should be required that all developments fronting Yonge Street be constructed with a 5.0m minimum ground floor-to-floor height. Visual permeability from the street into the developments through use of large amounts of glazing at grade is encouraged. This will further strengthen and expand the public realm of the street into private developments and help foster a feeling of inclusiveness and permeability.

To further encourage pedestrian activity along the street, it should be mandatory that all commercial/retail entrances, as well as residential lobbies and amenity spaces be located directly on Yonge Street and at corners, if corner conditions present themselves. To further support this, all vehicular parking or loading facilities are not to be visible from Yonge Street, and must be accessed off side or rear streets or laneways. The proposed on-boulevard cycling facilities will be closely related to the Pedestrian Clearway Zone and complement pedestrian activity along Yonge Street.

In order to provide an amenable zone for pedestrian traffic in all weather conditions, the inclusion of canopies, awnings, colonnades or any other weather protection devices into the façade of buildings fronting Yonge are generally encouraged. These will be highly recommended in developments adjacent to planned subway stations and bus stops and will be mandatory at the corner of Yonge and Steeles. Similarly, bicycle storage facilities will be installed around subway stations and within the boulevard to promote interactions between cyclists and commercial facilities.

In the following Section, as Urban Design Criteria of each character area remain similar to the 2012 SYMP, modifications to the Streetscape Plans are documented to illustrate the positive relationship of on-boulevard cycling facilities and the street wall and building massing, building setback, streetscape zones and ground floor.



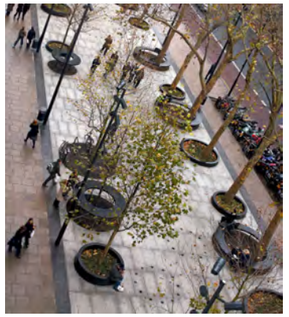


Figure 56, 57, 58 & 59: Streetscape Zone Precedent Imagery

3.2 YONGE STEELES GATEWAY DISTRICT

Street Wall – Here, a strong sharply defined, active street edge is envisioned. The street wall should be parallel to the street, with a 0-3m build-to line from a 7.0m minimum boulevard width. Ground floor retail is mandatory in this area.

Massing – The massing along this area of Yonge is the highest along the corridor. A 3.0m stepback above the 7th storey will be required and the maximum base building height is set at 12 storeys. High rise buildings (up to a maximum of 30 storeys) are encouraged at corner sites and will require a 10m stepback from the line of the street wall above the 12th storey.

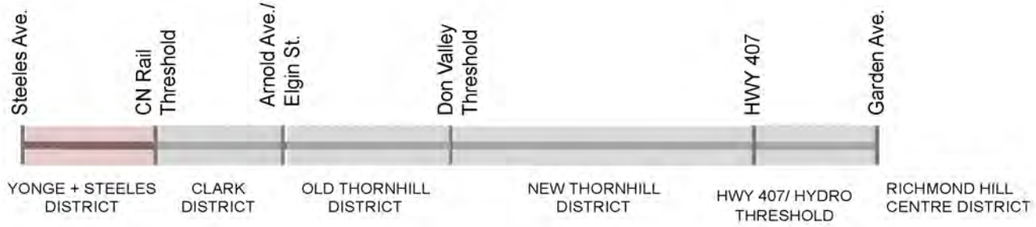


Figure 60: Typical Detail Plan of Yonge Steels Gateway District

3. Urban Design Criteria and Requirements

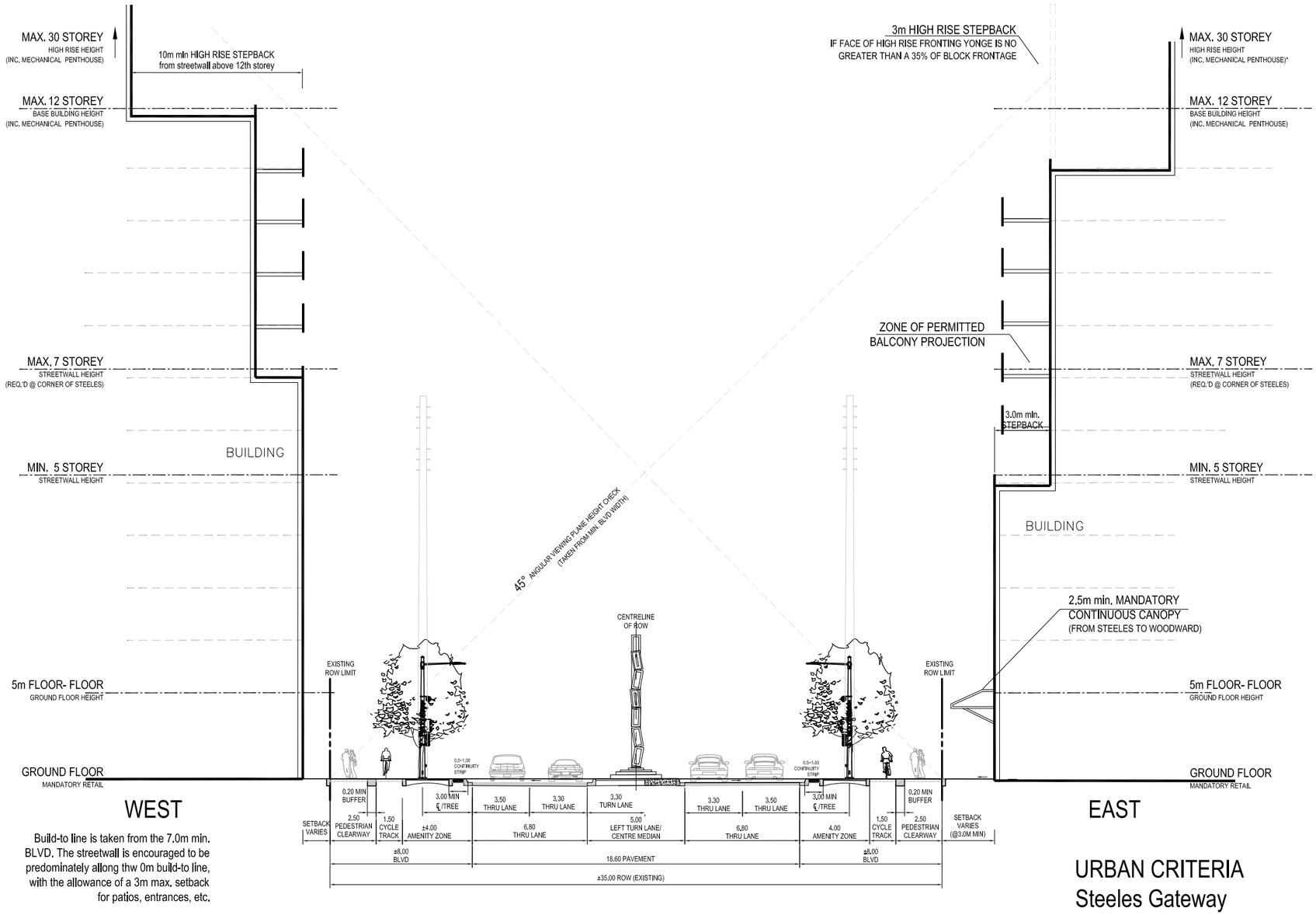


Figure 61: Urban Criteria - Steeles Gateway

3.2.1 SPECIAL FEATURES

Feature identified - Urban Gateway (forms the boundary between Toronto, Markham and Vaughan), as such the buildings on these four corners are encouraged to be maximized in height while exhibiting exceptional architectural design to give spatial definition to this gateway condition.

Feature identified - Major Transportation Link and Urban Square: There is an opportunity here for the public realm of the street to expand into a square facing the major intersection, providing a significant address to a major subway entrance. This new urban space can act as a meeting place for commuters as well as a place for highly public events. The life of the square is strengthened by its connection to the subway, which should be incorporated into the building adjacent to the square. This will encourage the interaction of pedestrians with the built form along this edge. To facilitate the creation of this public square a required additional setback of the street wall on the east side of Yonge at Steeles will be mandatory for any development.

Feature identified - Pocket Park: By encouraging a strong street wall in this character area, any intermittent setbacks or pockets within it will become concentrated public moments of reprieve. The pocket park typology could be employed at strategic mid-block locations to allow for small scale moments of pause. One such opportunity would be at one of the secondary entrances/exits to Steeles Station, creating protected meeting point which could be associated with outdoor café seating or some other active amenity.

Feature identified – The Median: A median is introduced along this section as a device to provide a more pedestrian scale to the streetscape amongst such intensified massing. It also provides for an opportunity to contribute to the special identity of this area, supporting the idea of Steeles as a major urban transportation gateway, since both cars and pedestrian traveling the length of this stretch will be exposed to its significant visual impact. The inclusion of sculptural features

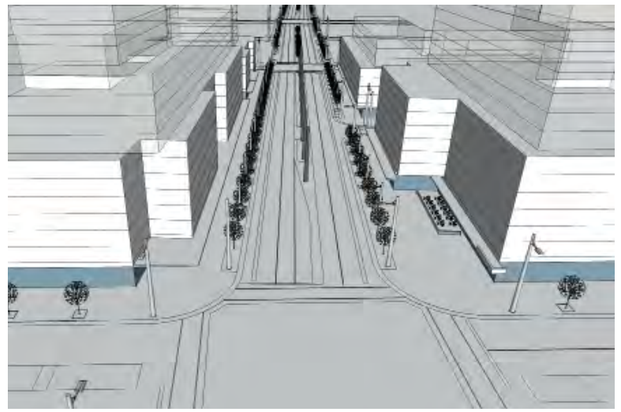


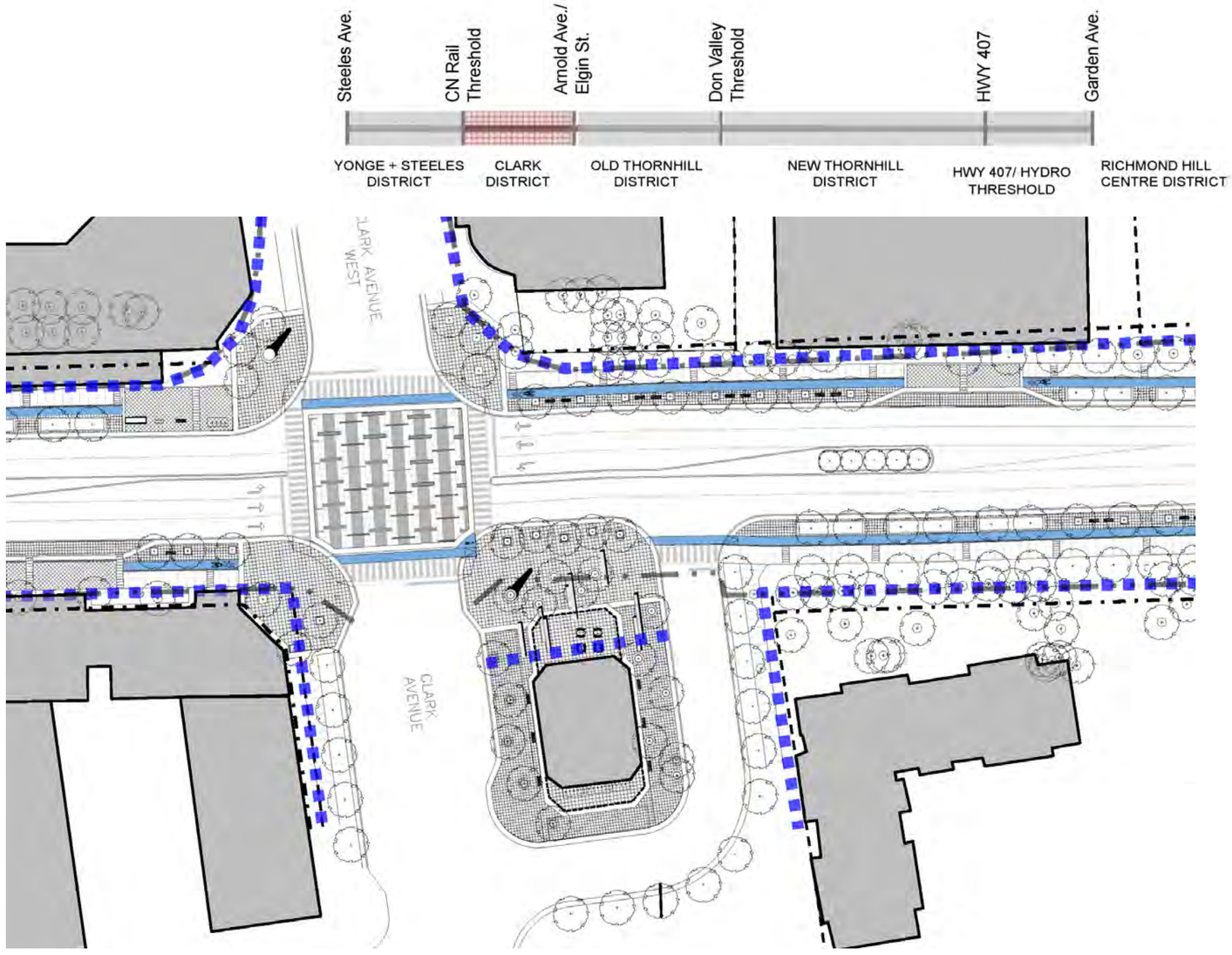
Figure 62: Preliminary Perspective of Yonge Steeles Gateway

Figure 63: Perspective of Yonge Steeles Gateway

3.3 CLARK STATION DISTRICT

Street Wall – The street wall should be placed within a 0-3m build-to zone from the 7.0m min. boulevard width. The percentage of frontage required within this zone will be slightly more relaxed than within the Steeles area, so that a slight loosening of the urban fabric can start to occur. Active uses at grade are required for this area (though retail will not be mandatory).

Massing – North of the CN Rail overpass the massing along Yonge begins to decrease in height. The high-rise building type is still permitted with the same requirements as in the Steeles area (a 10m stepback from the street wall above the 12th storey), though dense mid-rise blocks are encouraged to a greater degree (with a 3.0m stepback above the 7th storey and the maximum base building height of 12 storeys).



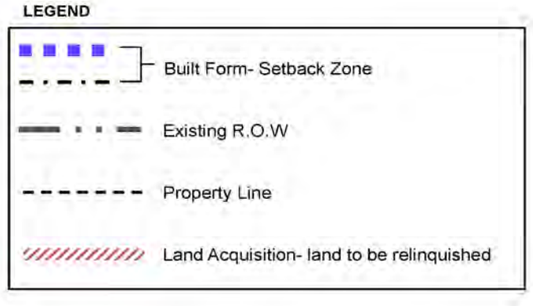


Figure 64: Typical Detail Plan of Clark Station District

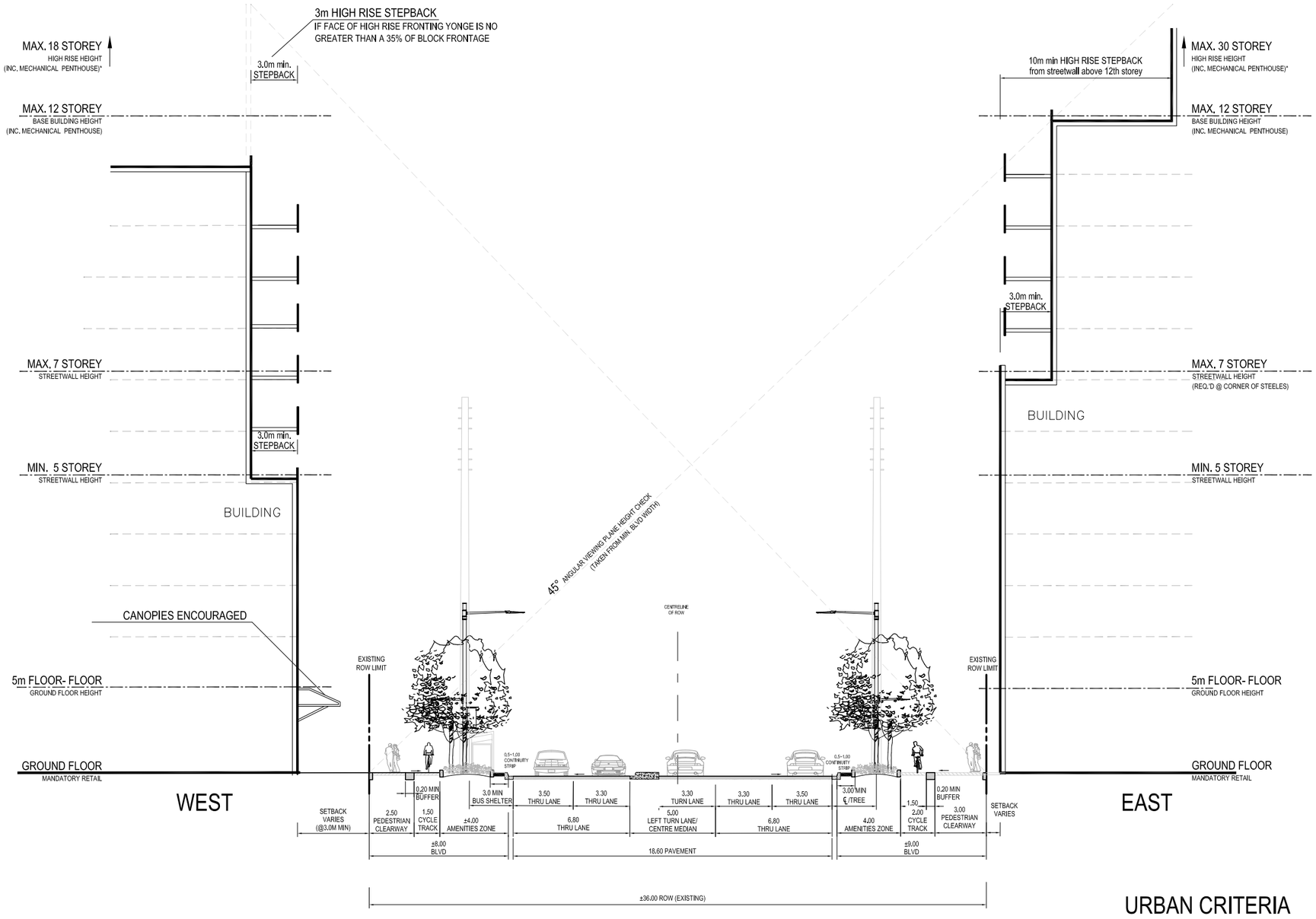


Figure 65: Urban Criteria - Clark District: Mid-block

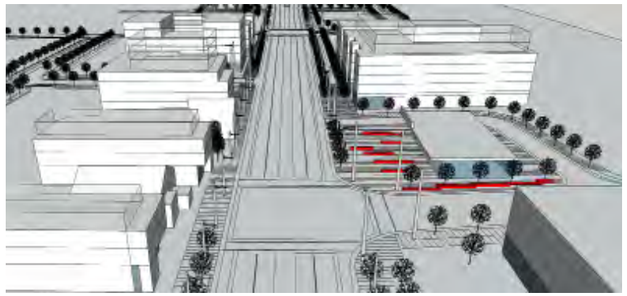
3.3.1 SPECIAL FEATURES

Feature identified - CN Rail

The bridge over the CN Rail is a man-made feature that acts as a break in the density of built form between the highly-urban Steeles area and a massing that begins to decrease in height south of the overpass. This piece of infrastructure presents the opportunity to characterize this area through innovative and engaging design while taking advantage of the opening up of view corridors to the east and west. A deck of substantial size could be built in conjunction with the bridge to create an elevated park that would give space and definition to moments of pause and enjoyment of an impressive landscape. This 'episode' has the potential to become an exciting destination so particular attention will have to be given to lighting and security to ensure that the public realm feels secure and welcoming.

Feature identified – Clark Station

As a stand-alone transit building, Clark Station has the potential to act as an orientating beacon for this neighbourhood. By strategically framing it with an open public plaza, it can be given a significant presence that will have a visual impact on both pedestrians and vehicular traffic. It will be important to ensure its permeability and transparency to the street to ensure that its impact and address is both obvious and inviting. This pavilion building and its public plaza will be mutually supportive, creating an amenable meeting and gathering space that provides open and protected seating areas as well as storage for bicycles. The design of its plaza should be informed by its urban context amongst dense mid-rise blocks; interest in its corner siting could be generated by a bold manipulation of the plaza surfaces, using lighting and a differentiation in materials to highlight the various surfaces of the plaza that are amenable to seating, gathering and meeting.



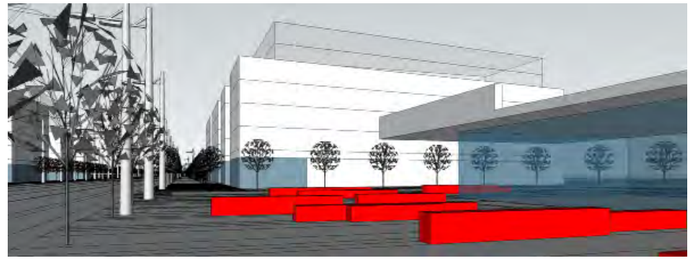


Figure 66 & 67: Preliminary Perspectives of Clark Station

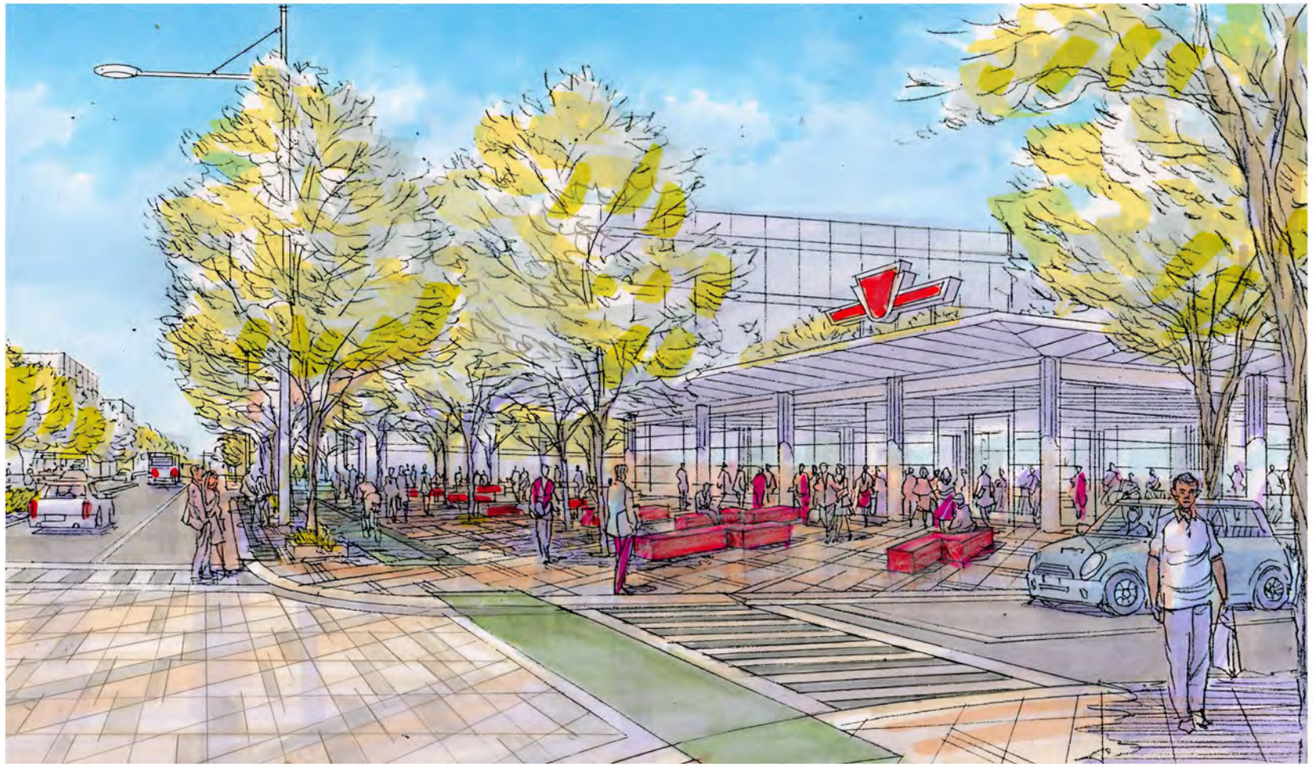
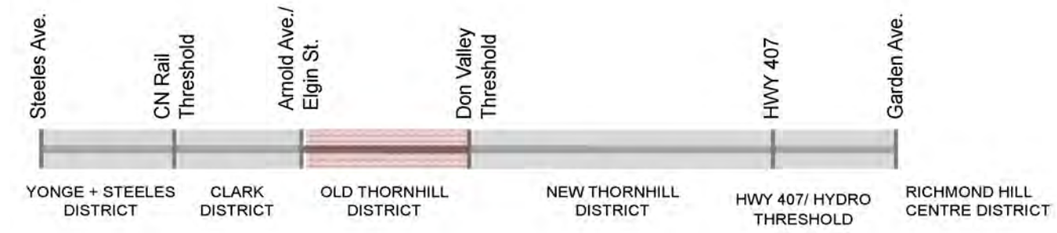


Figure 68: Perspective of Clark Station

3.4 OLD THORNHILL VILLAGE DISTRICT

Street Wall – Old Thornhill has a substantial number of historically significant low-rise buildings. The built form of the historic buildings allows for a much more porous street edge that opens up to the neighbourhoods to the east and west of Yonge. As a result a lower street wall of 3-5 storeys is suggested in this area with a required 1.8m setback from the 7.75 minimum boulevard dimension. An additional setback may be necessary adjacent to historic buildings, as suggested by the “Thornhill Yonge Street Study, 2005”. At grade retail is encouraged on a small scale to reinforce the village feel.

Massing – New development in this area will be focused on repairing the existing fabric by contextual infill projects that respect and compliment both the massing and the setback of the historic buildings adjacent. The overall height of the buildings here has been thoroughly studied and planned out in the “Thornhill Yonge Street Study, 2005”



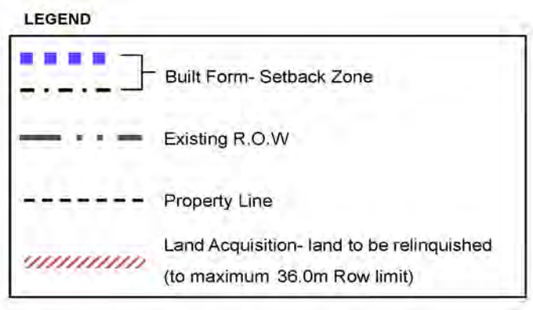


Figure 69: Typical Detail Plan of Old Thornhill District

3. Urban Design Criteria and Requirements

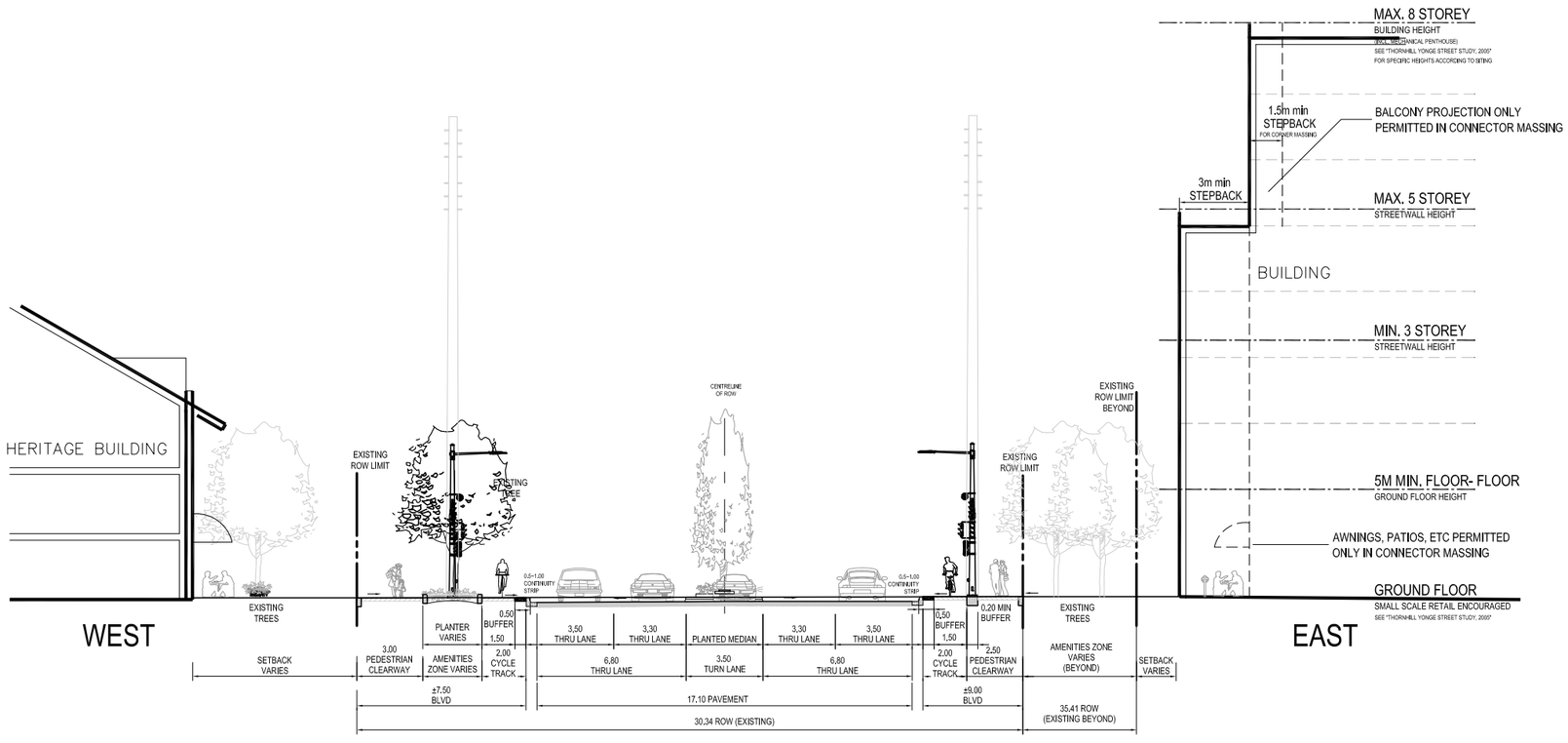


Figure 70: Urban Criteria - Old Thornhill: Approach to Intersection

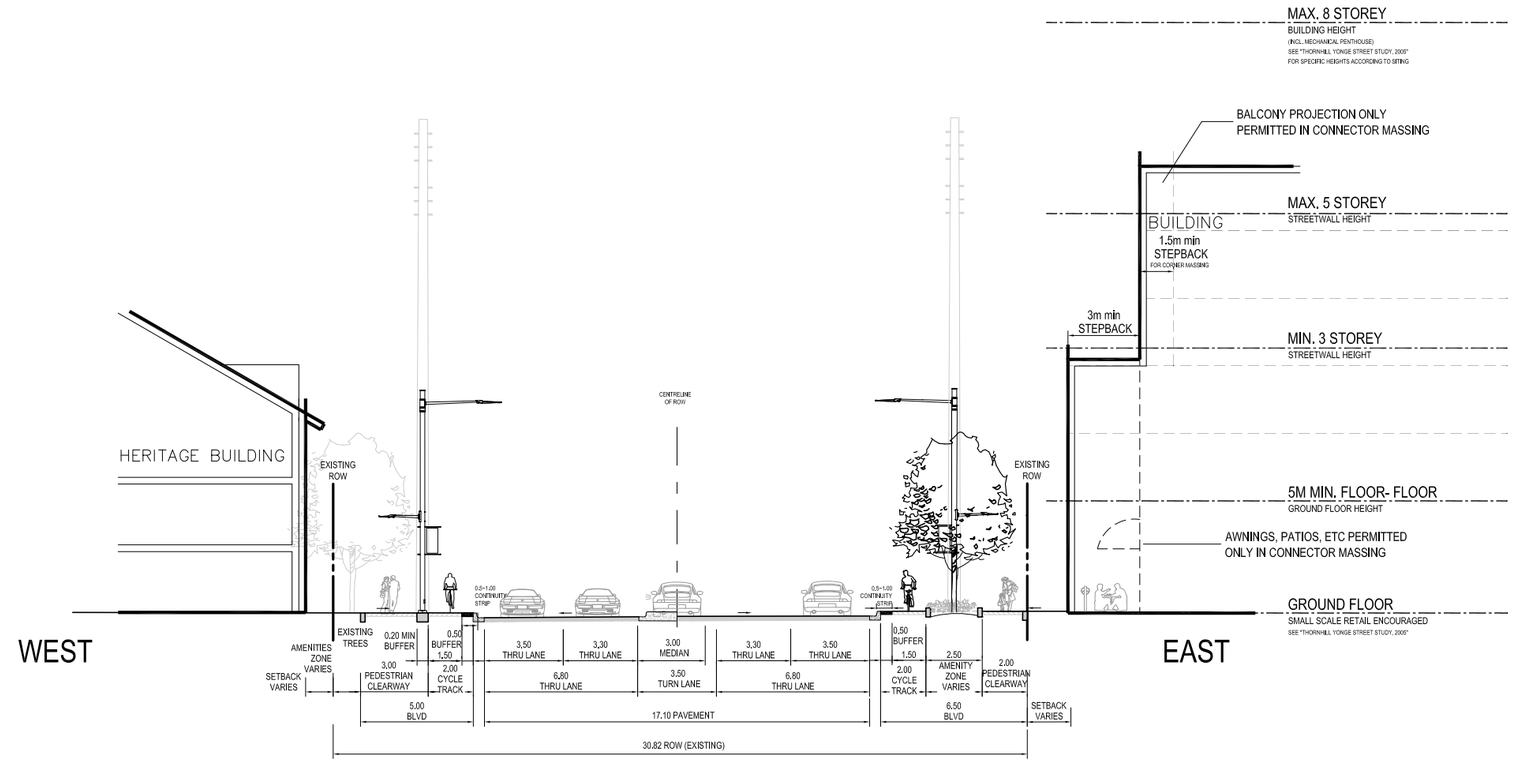


Figure 71: Urban Criteria - Old Thornhill: Heritage

3.4.1 SPECIAL FEATURES

Feature identified – Linear Park

On the east side of Yonge, just south of John Street, is a significant stretch of single family housing that backs onto Yonge. This is one of the few places in which frontage onto Yonge does not occur; creating a significant stretch of street edge that is not active. The street edge here will need to be developed so as to enhance the pedestrian realm while respecting privacy of the backyard conditions of these houses. The street edge of the west side will characterized by low-rise buildings and infill developments in which ground floor retail uses will be highly encouraged. With this in mind, it is suggested that the wide boulevard along the east side be programmed as a linear park so that two parallel spaces could complement each other in supporting a leisurely village environment. The strategic placement of street furniture, trees, and hard / soft landscaping will be key components of this linear park. Its defining characteristic will be informed by how the edge of the boulevard is defined and separated from the rear properties of the abutting single family housing. In fact, this abutment condition presents an exciting opportunity to create a dynamic and sculptural dividing “wall” between the linear park and the properties that will have a significant visual and affective impact on the pedestrian realm of the street.

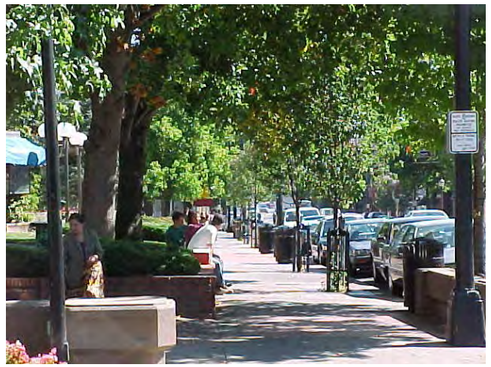


Figure 72: Linear Park

- Link to ValleyWalk
- Creates intimate setting with retail across the street

Feature identified – The Market and Market Square

The market is an already established building type in this neighbourhood; however the potential it has to support both an indoor and outdoor retail and programmed event space has not yet been established. Its position between two subway stations makes it a potent and appropriate location for a “public destination” and a moment of pause. It is suggested that the further development of this building type would entail ensuring that this animated public space be a well considered portion of the design. Creating a small square addressing both the intersection and the main entrance to the market building would take advantage of the corner condition to focus attention on the active square as well as generate interest in a visible outdoor link to a larger, more protected square in behind the market building. Using the market building to define the edges of this larger square creates a more intimate and protected public space away from the traffic on Yonge. This is an ‘episode’ that encourages the pedestrian realm to penetrate the built form through the arrangement of open spaces.

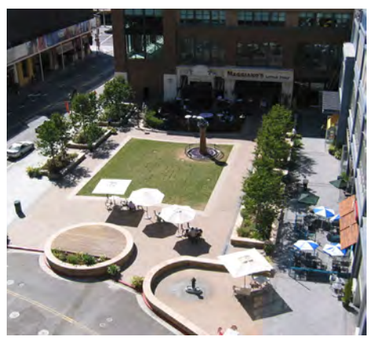


Figure 73 & 74: The Market and Market Square

- Exposed and protected
- Social retail space
- Small event space

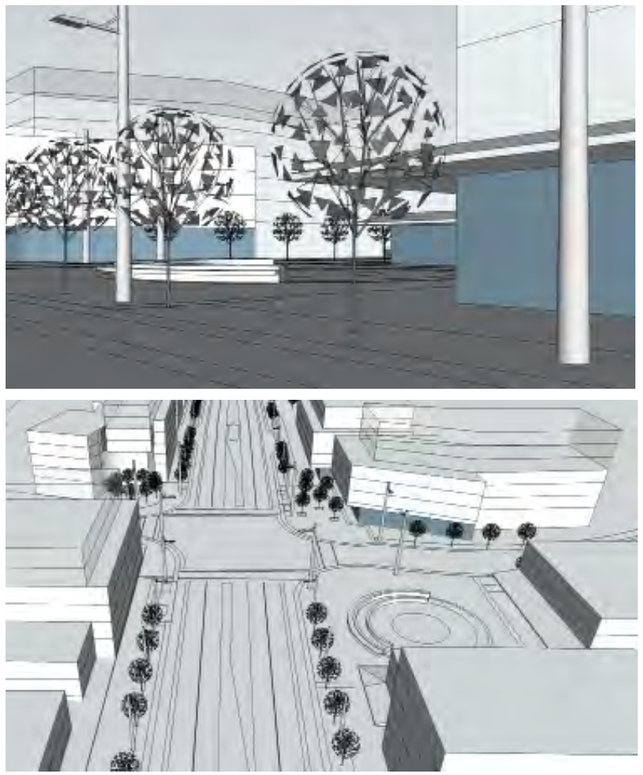


Figure 75: Preliminary Perspectives of The Market Square at Old Thornhill

Figure 76: Perspective of The Market Square at Old Thornhill

3.5 DON VALLEY THRESHOLD

Massing – The bridge over the Don River at Cricklewood Park and the Ladies' Golf Course acts as another break in the built urban form where vistas to the east and west open up to a natural and green valley. The portion of Yonge directly to the north and south of the bridge is fairly undefined owing to the gradual tapering off of the low-rise form of Old Thornhill in conjunction with the expanse of the adjacent golf course and natural environment to the north.

Street Edge – Because of the natural features and topography in this area, the street edge as it exists to the north and south of the bridge forms a soft transition that would benefit from some definition. This lack of definition is a welcome shift in scale to the street and an opportunity for environmental art installations.

Figure 77: Don Valley Threshold Aerial

3.5.1 SPECIAL FEATURES

Feature identified – The Valley: The valley's topography in conjunction with the low and loose urban form at its edges, opens up vistas that reach from the historic context of Old Thornhill into a beautiful and maintained natural feature (the valley and golf course). The development and 'programming' of a leisure promenade along this stretch of Yonge could act as a key method of achieving the definition the street edge along this portion could benefit from. Given the strong historic and natural context of the area, the incorporation of interpretive elements into the streetscape could be a guiding theme by which this is implemented.

A. Landscaped Walk to the North and South: Given the historic and natural context of Yonge Street in this particular area, a unified promenade to the north and south of the bridge could act as a joint historically and naturally themed interpretive walk that would connect the character areas of Old and New Thornhill. Of utmost importance will be how the interpretive elements are incorporated into the streetscape. Highly creative means of achieving this will be encouraged over the traditional use of plaques, i.e., the incorporation of elements into the sidewalk material itself. In light of the absence of any street wall in this area, the strategic placement of street furniture, trees, planters and lighting will notably define its edges and must support the content and leisurely pace of such a promenade. Additional lighting beyond the standard lights that will be installed consistently along Yonge Street may be necessary for security and can be used to give a different character to this walk while highlighting particular areas of interest.

B. Feature Bridge: The bridge over this valley has the potential to be an iconic piece of designed infrastructure. Using the form of the bridge to bring the pedestrian level down to the natural environment below would be a bold move that reinforces the leisurely pace of this part of Yonge while creating a space for pedestrians, removed from the vehicular traffic, to pause and appreciate the environment and pastoral views.

Figure 78: Key Plan

Figure 79: Landscape Link
- Green interpretive walk

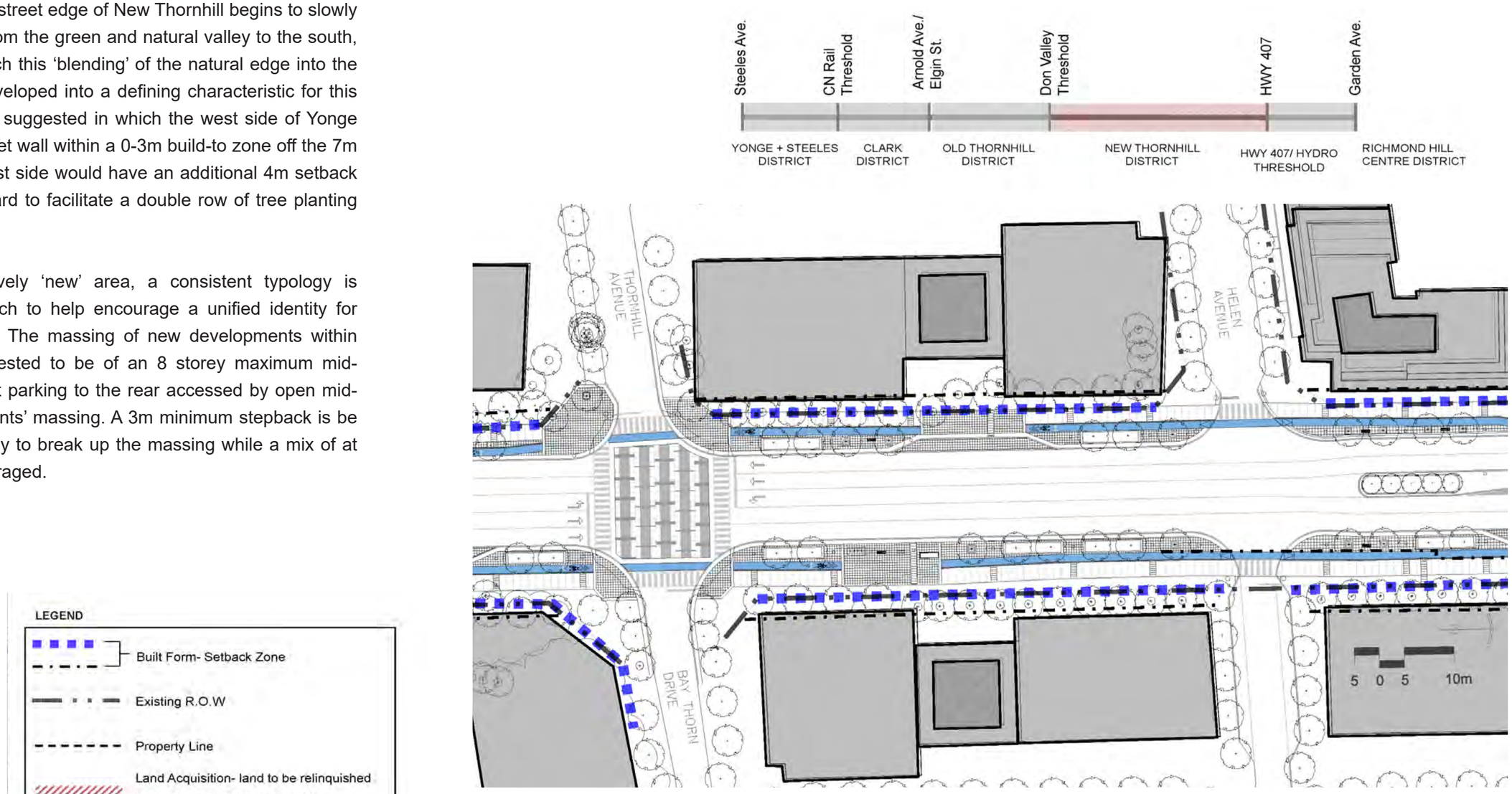
Figure 80: Feature Bridge
- Pedestrian link to valley below

Figure 81: Landscape Link
- Historic interpretive walk

3.6 NEW THORNHILL DISTRICT

Street Wall – Seeing as the street edge of New Thornhill begins to slowly define itself as it emerges from the green and natural valley to the south, an opportunity arises in which this 'blending' of the natural edge into the urban street wall can be developed into a defining characteristic for this area. As such a strategy is suggested in which the west side of Yonge would have a 4-6 storey street wall within a 0-3m build-to zone off the 7m minimum boulevard. The east side would have an additional 4m setback off the 7m minimum boulevard to facilitate a double row of tree planting as outlined below.

Massing – Being a relatively 'new' area, a consistent typology is encouraged along this stretch to help encourage a unified identity for both sides of Yonge Street. The massing of new developments within this character area is suggested to be of an 8 storey maximum mid-block typology with off street parking to the rear accessed by open mid-block links in the developments' massing. A 3m minimum stepback is be required above the 6th storey to break up the massing while a mix of at grade active uses are encouraged.



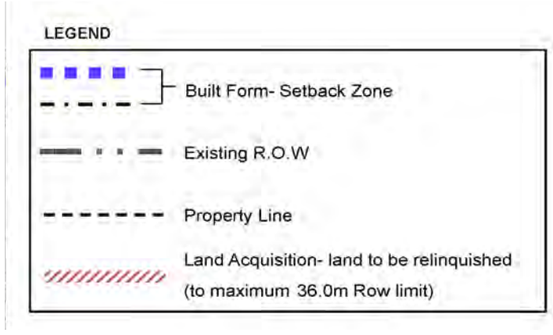


Figure 82: Typical Detail Plan of New Thornhill District

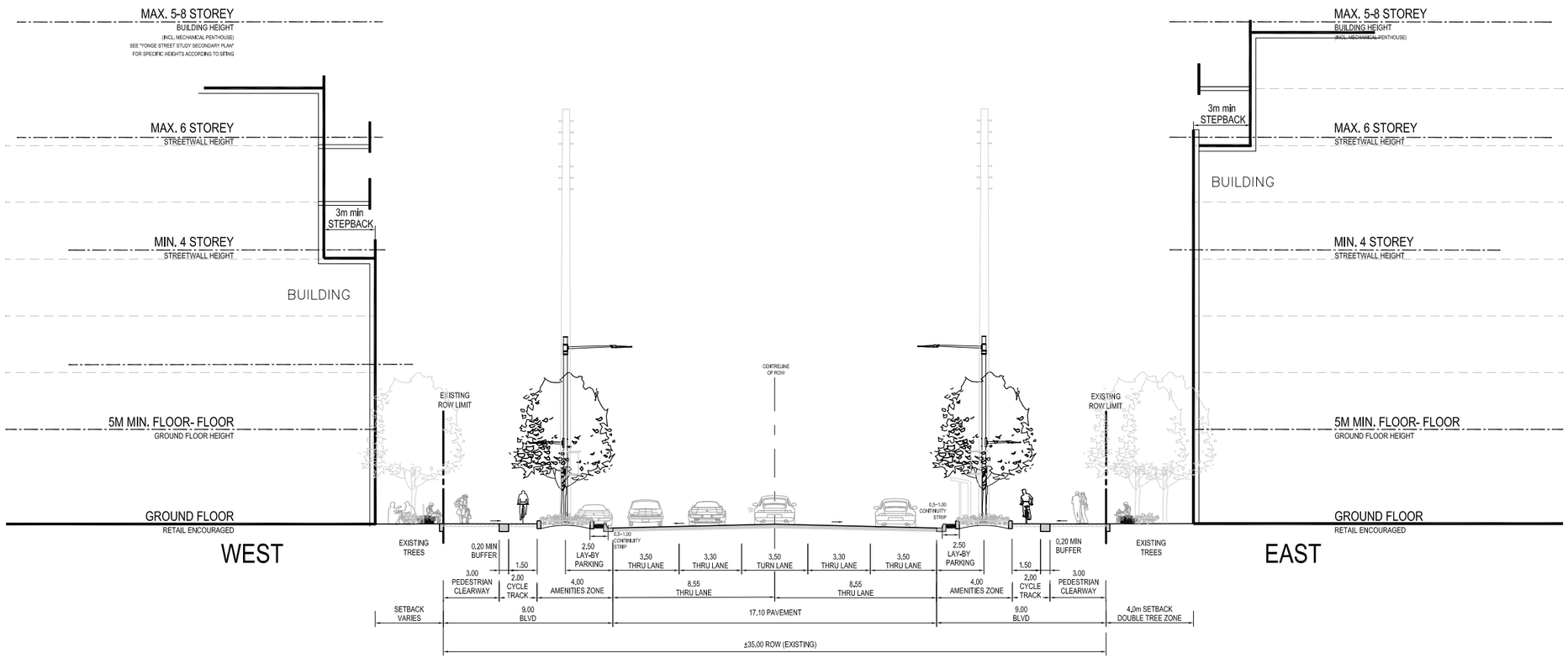


Figure 83: Urban Criteria - New Thornhill

3.6.1 SPECIAL FEATURES

Feature Identified - The Double Row

One method of defining the street edge while transitioning from the natural condition to the south, to the street wall that begins to emerge, is to use a widened boulevard to accommodate a double row of trees on the east side of Yonge. This would introduce a new and potent defining characteristic to New Thornhill. The double row would be possible by the introduction of a mandatory 4m street wall setback off the minimum boulevard and a requirement that the second row of trees be planted on private land in the same rhythm and type as the first row of trees planted within the Right-of-Way. This move brings the natural green environment from the valley to the street, generating a distinct and softer green character for this area.

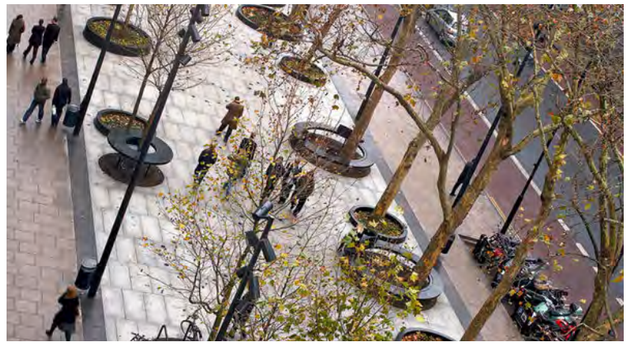


Figure 84: The Double Row

- Creates distinct character for area with generous public boulevard

Feature Identified - Midblock Link

By encouraging new developments in to embrace the mid-block link as a method of dealing with access to back-lot parking areas, a network of mid-block spaces is created that begin to both define the area, as well as provide an amenity to both the developments and street. These mid-block spaces would be most successful if they were not solely for the purpose of accessing parking. Lining their edges with active uses would animate them further, and with strategic landscape design could be exciting shared amenity spaces for both the pedestrians on the boulevard and the users of the buildings themselves.

Figure 85: Mid-block Link

- Network of landscaped public mid-block links to back lot parking areas
- Can act as open amenity space for residential or office

3.7 HIGHWAY 407 / HYDRO THRESHOLD

Massing – The infrastructure of the 407 on and off ramps create a transitional gap in the built from along Yonge. Much like the bridge over the CN Rail and the Don River, the concourse under the 407 could be an opportunity to create an episode of visual interest.

Street Edge – Because of the large scale infrastructure and sweeping topography in this area, the street edge as it exists to the north and south of the bridge is unclear and would benefit from some definition.

Figure 86: Highway 407 / Hydro Threshold

3. Urban Design Criteria and Requirements

3.7.1 SPECIAL FEATURES

Feature Identified - Longbridge Station: Unlike Clark Station, Longbridge will directly engage the vehicular traffic of Yonge Street with a planned commuter parking lot across the street from the station building itself. The creative landscape design and layout of the parking lot will be a key method by which this surface lot typology can be made into an enjoyable part of the everyday experience of commuting. An underground connection across the street will be the most pedestrian friendly option for the crossing of Yonge and presents an opportunity to create a designed pavilion as a portal to the underpass that is both highly visible and well incorporated into the landscape design of the parking lot. The station building itself should also be highly visible and have a complimentary design to the landscaped parking lot across the street to visually reinforce the connection. The building should be positioned so as not to be completely cut off from the pedestrian boulevard on Yonge by any vehicular pick up and drop off requirements (in fact it is suggested that if possible, any pickup and drop off areas be incorporated into the landscaped parking lot).

Feature Identified - The 407 ETR and the Underpass: Unlike the bridges over the CN Rail and Don River, the concourse under the 407 ETR is a less likely candidate for an 'iconic redesign' of the structure itself, however the vast amount of green space within the on and off ramp circles could host of a creative and visually interesting installation of landscape design. Encouraging a visually arresting backdrop for this vast stretch of streetscape will be key in making both pedestrian and vehicular movement in this area both interesting and welcoming. Other key methods by which this can be achieved, while encouraging safety, will rely on creative landscaping of the edges of the boulevard leading up to the bridge to the north and south in addition to lighting and material choices for the boulevard edges and retaining walls.

Feature Identified - ArtPark: Directly to the north of the 407 ETR underpass on the east side of Yonge, the street edge expands visually into a very large scale open green space in which a storm water management pond is situated. The development of an interpretive center related to the storm water pond within this green space would encourage social and community involvement in green issues as well as provide a facilities building to support larger scale social and public events that could take place in this green space. There is also an opportunity here to further define the identity and aesthetic of this potential park by encouraging the pairing of creative landscape design with outdoor art installations. Such an approach has the potential to solidify this episode as a significant destination for the public and pedestrian realm along Yonge.

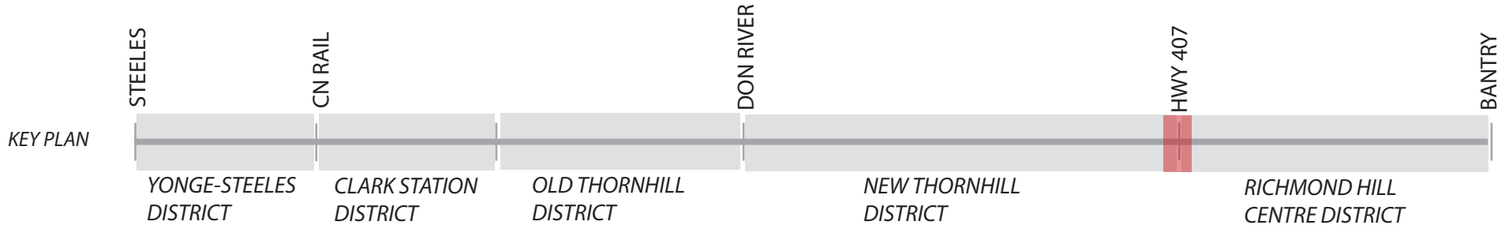


Figure 87: Longbridge Station

- Meeting point
- Pedestrian link to landscaped parking

Figure 88: The Planting

- Creates visual interest to pedestrian link under 407 ETR

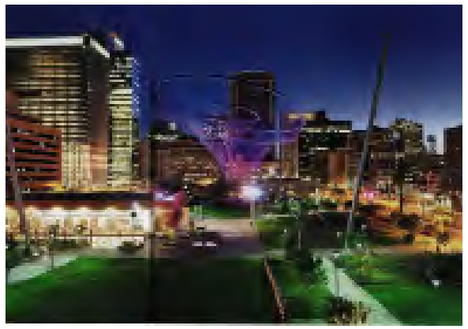


Figure 89: Art Park

- Very large scale open space for events as well as art park
- Interpretive centre for storm water management

3.8 RICHMOND HILL CENTRE DISTRICT

Street Edge – The 4-6 storey street wall height is consistent with that at New Thornhill, with a 0-3m build-to line off the 7m minimum boulevard. Ground floor retail, especially adjacent to the BRT stop is highly encouraged.

Massing – At this high point in Yonge's topography, the massing builds itself up to again (though not quite as high as at Steeles). A maximum base building height of 15 storeys is suggested with a required 3m stepback above the 6th storey.

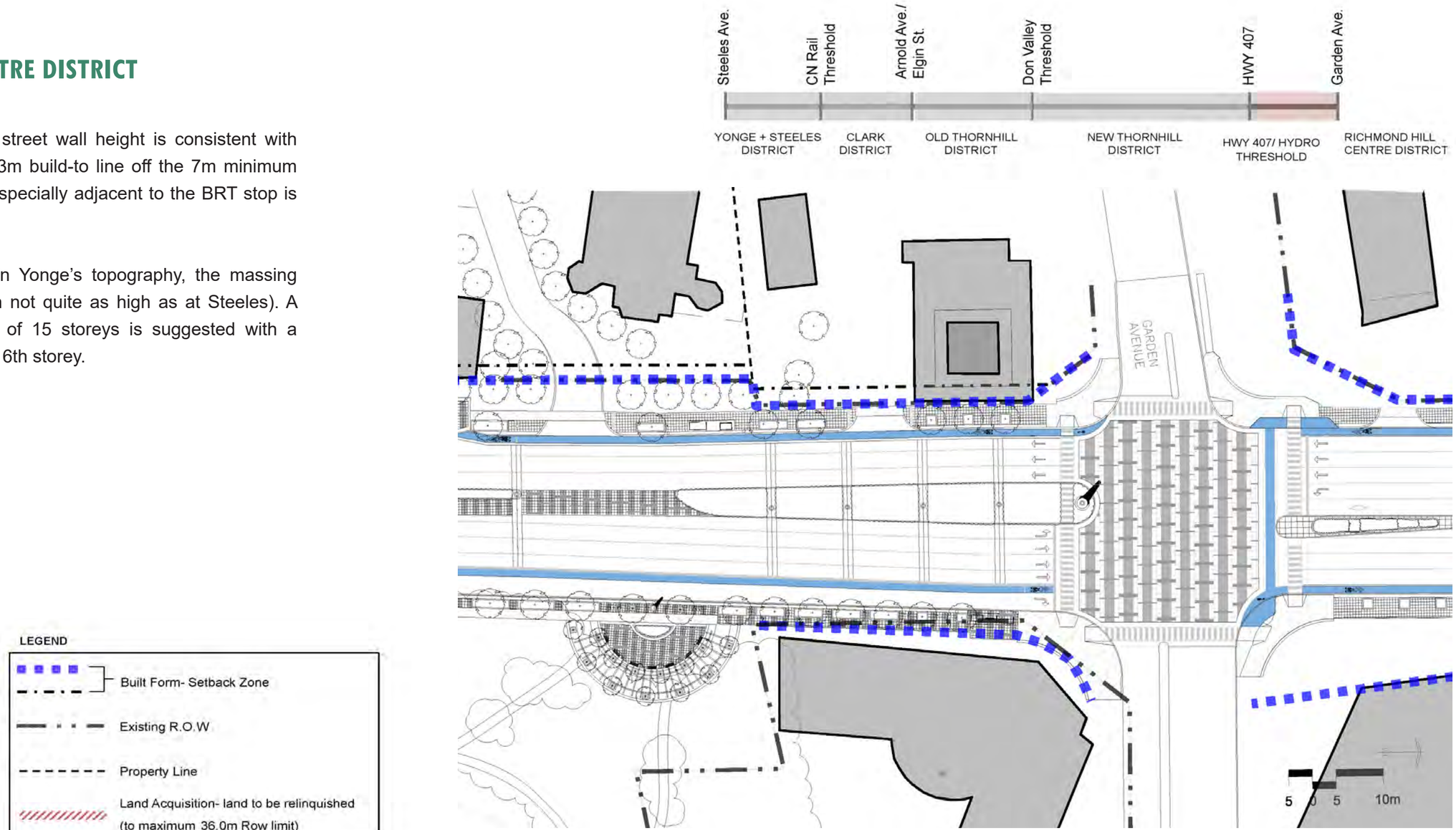


Figure 90: Typical Detail Plan of Richmond Hill Centre District

3. Urban Design Criteria and Requirements

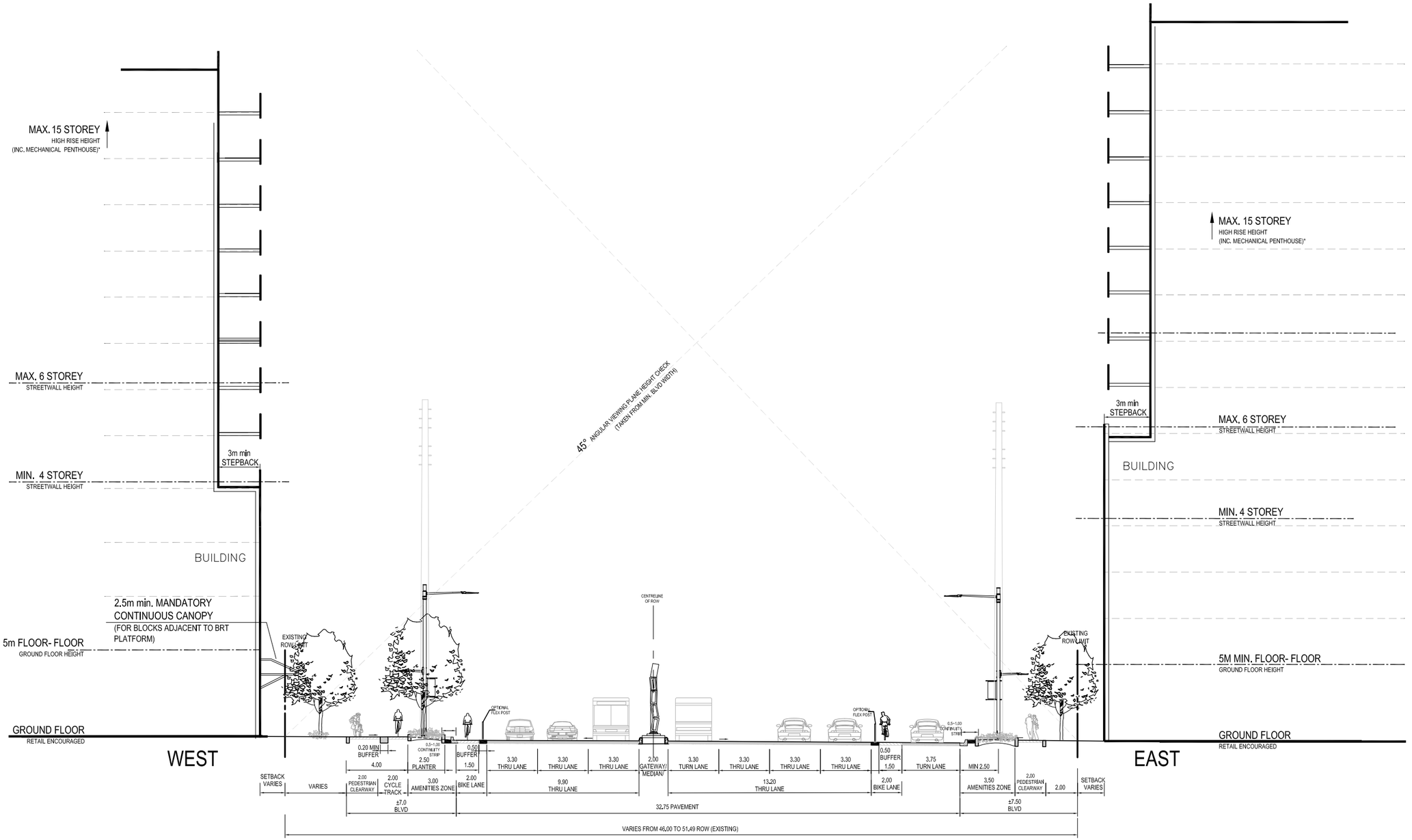


Figure 91: Urban Criteria - Richmond Hill Centre District

3.8.1 SPECIAL FEATURES

Feature identified – The Median

Seeing as the density and massing of Richmond Hill is built up to intensity closer to that of Yonge and Steeles, the median that appears at Yonge and Steeles is reintroduced. Here, it is similarly used as a device to provide a more pedestrian scale to the streetscape while accommodating the future BRT, as well as supporting the idea of Richmond Hill as another major urban intensified transportation gateway. The inclusion of sculptural features within the median, as at Yonge and Steeles, could be considered as a means of further developing this but do not have to be identical, in fact a variation on the theme could positively differentiate Richmond Hill's identity and act as a passive means of way-finding.

Feature identified – Linear Park + Major Link

Richmond Hill Center is a major urban intensified node located just to the East of Yonge in Richmond Hill. This presents the opportunity to create a significant link from Yonge to the Center and its YRT Station in the form of a perpendicular linear park. This significantly green space will open up views through the built form to the east and west, creating an essential and very public address for the station that reaches beyond its immediate context to the arterial roads that run parallel to it. Encouraging the frontage of new development along the linear park to address it in a well considered manner (by having their ground floors access the park directly) will pull the edges of active frontage from Yonge along the park's perimeter. This will encourage and support a public space directly off Yonge that can become a destination for outdoor leisure activities, as well as an amenable view corridor through the urban fabric.

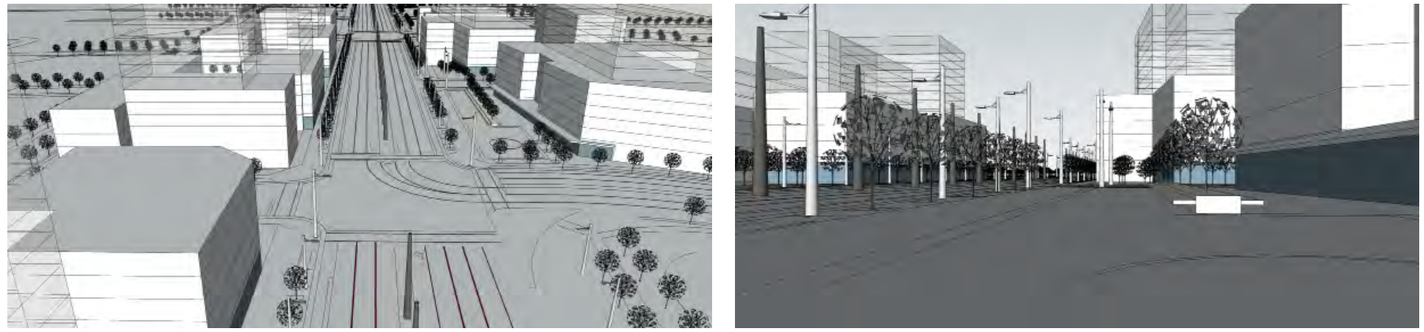


Figure 92: Preliminary Perspectives of Richmond Hill Centre

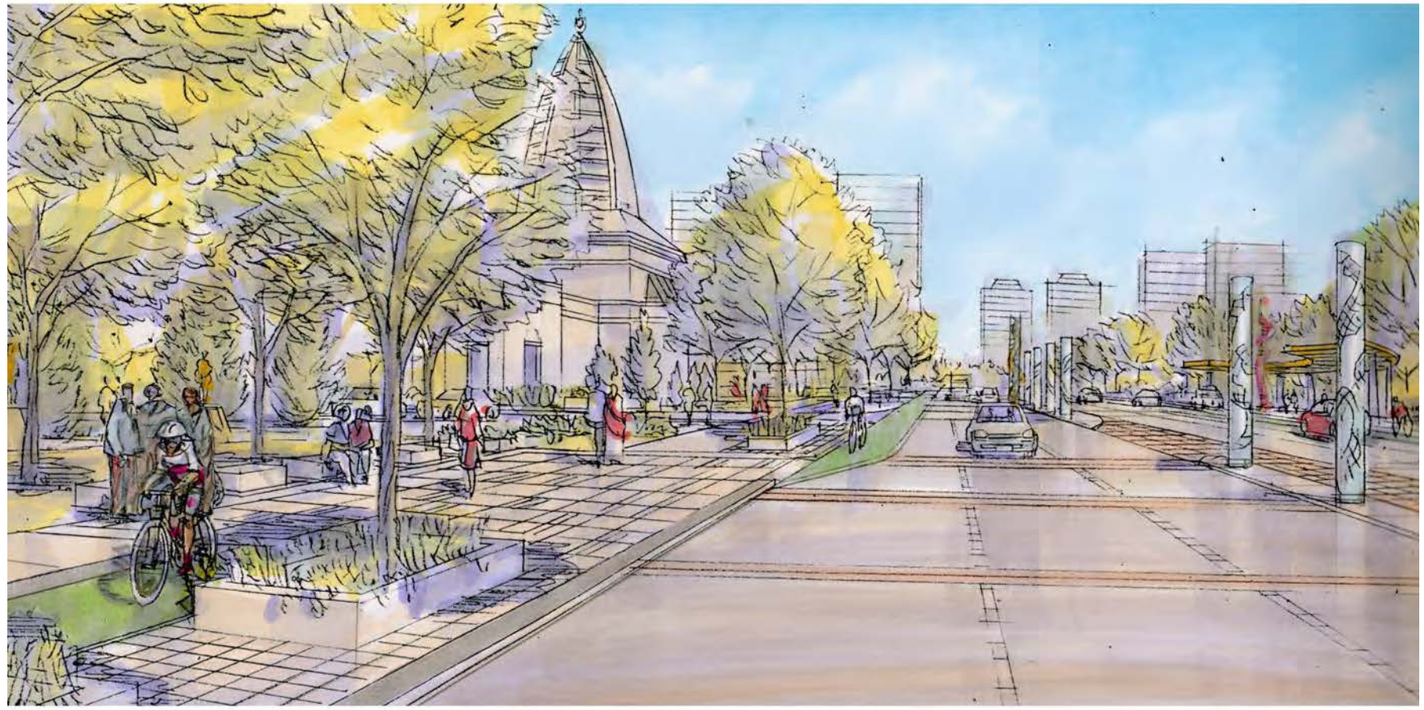
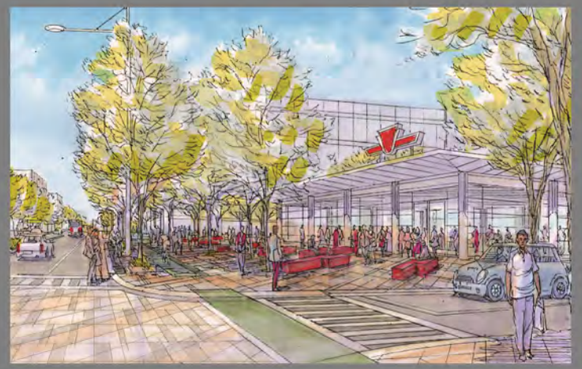


Figure 93: Perspective of Richmond Hill Centre



4

SPECIAL CHARACTER AREA CUSTOMIZATION

Figure 93: Perspective of Richmond Hill Centre

4.1 INTRODUCTION

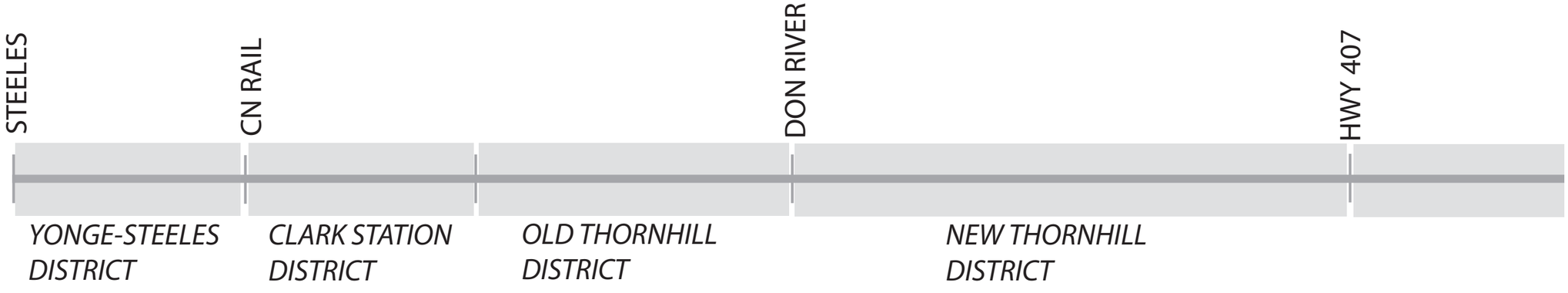
This section provides a character description and design guidelines specific to each of the five (5) special character areas and three (3) thresholds.

The character description provides an overview of the built form character, street level land uses, street edge and pedestrian realm. Any special features or unique defining attributes are also described here.

The design guidelines provide specific recommendations for each character area and threshold regarding a number of streetscape elements, including:

- Surface Treatment for cycling facilities and pedestrian walkways;
- Specialty Lighting;
- Planting;
- Parking;
- Furniture;
- Streetscape Area;
- Boulevard Paving Materials;
- Colour Palette; and,
- Finishes.

Figure 94: Key Pan



4.2 YONGE STEELES GATEWAY DISTRICT

4.2.1 CHARACTER DESCRIPTION

The Yonge Steeles Gateway District will be characterized by high density, urban building-lined street edge with vibrant grade-related retail uses. Yonge Steeles will have a generous pedestrian realm with connections to the proposed below grade transit hub (Steeles Station). This district establishes a gateway experience into York Region expressed with at-grade plaza spaces, public art and iconic median design.

4.2.2 DESIGN GUIDELINES

Surface Treatments

- Predominantly hard paved surfaces (75-80%);
- Soft surfaces (20-25%);
- Continuous pedestrian surface material from edge of cycling facilities or the Furnishing and Planting Zone to building face;
- Continuous cycling facilities surface material adjacent but clearly delineated from the pedestrian surface material;
- Finished surfaces of cycling facilities shall be smooth and consistent in texture such as StreetBondCL as indicated in the Detailed Design Guidelines Report;
- Accent surface treatments should be located to highlight special nodes and / or edges.

Speciality Lighting

- Abundant ambient light from store fronts and building foyers;
- Special feature lighting of public art and street trees in plazas and median.

Planting

- Large street trees should be planted flush to grade with metal grates near intersections;
- Raised tree planters shall be used in mid-block sections;
- Supportive root zones utilizing cell and / or structural soil systems;
- All planting shall be consistent with York Region plant selections for native and salt tolerant species;
- Rainwater / stormwater - capture systems and subgrade drainage should be used to minimize run-off and provide irrigation.

Parking

- On-street parking is not recommended for this district.

Furniture

- Street furniture shall be located at transit stops and other nodes such as pocket parks and major gateway intersection plazas.

Boulevard Paving Materials

- Furniture and Planting Zone: Linear unit pavers with a feature colour of charcoal;
- Pedestrian Clearway Zone: natural concrete with saw cut and expansion joints to form reduced panel design shall be used;
- Cycling facilities: smooth and consistent texture material such as StreetBondCL.

Colour Palette

- Pedestrian Paving: A strong neutral colour scheme shall be used with dark charcoal accent enhancements used in banding and intermixed with linear unit stone paving pattern; Large size light grey pavers with a different texture than the dark accent pavers shall be used to create an elegant feel for the commercial space;
- Cycling Facilities: Contrasting colour to pedestrian paving, such as “Evergreen”. could be applied to the surface of cycling;
- Bright colours will be used on banners and displays;
- Consistent street print is to be used in bicycle lanes.

Finishes

- Finishes to be used within this district include natural sand-blast concrete for walkways and smooth and consistent texture for cycling facilities, natural glass, wood and metallic furniture surfaces.

Figure 95: Planting Concept

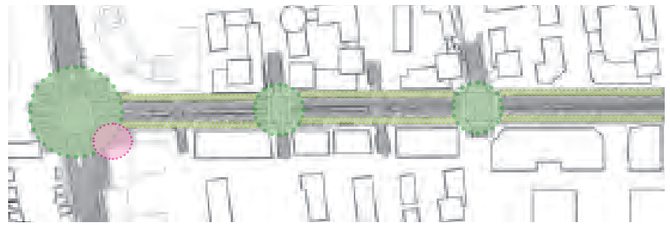
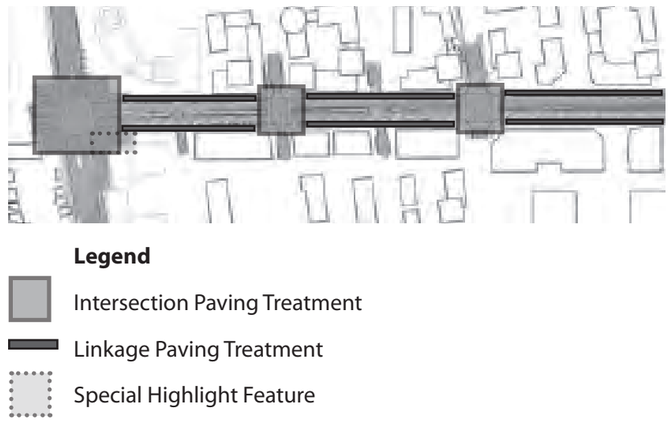


Figure 96: Paving Concept



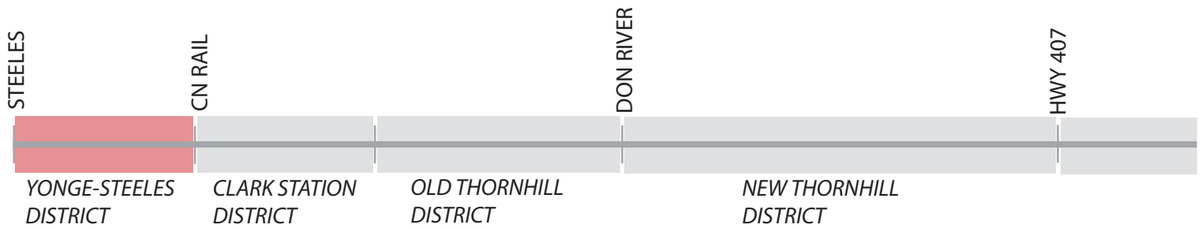


Figure 99: Key Pan

Figure 97, 98: Planting Precedent Images

Figure 100: Specialty Lighting

Figure 101: Perspective of Yonge Steeles Gateway

4. Special Character Area Customization

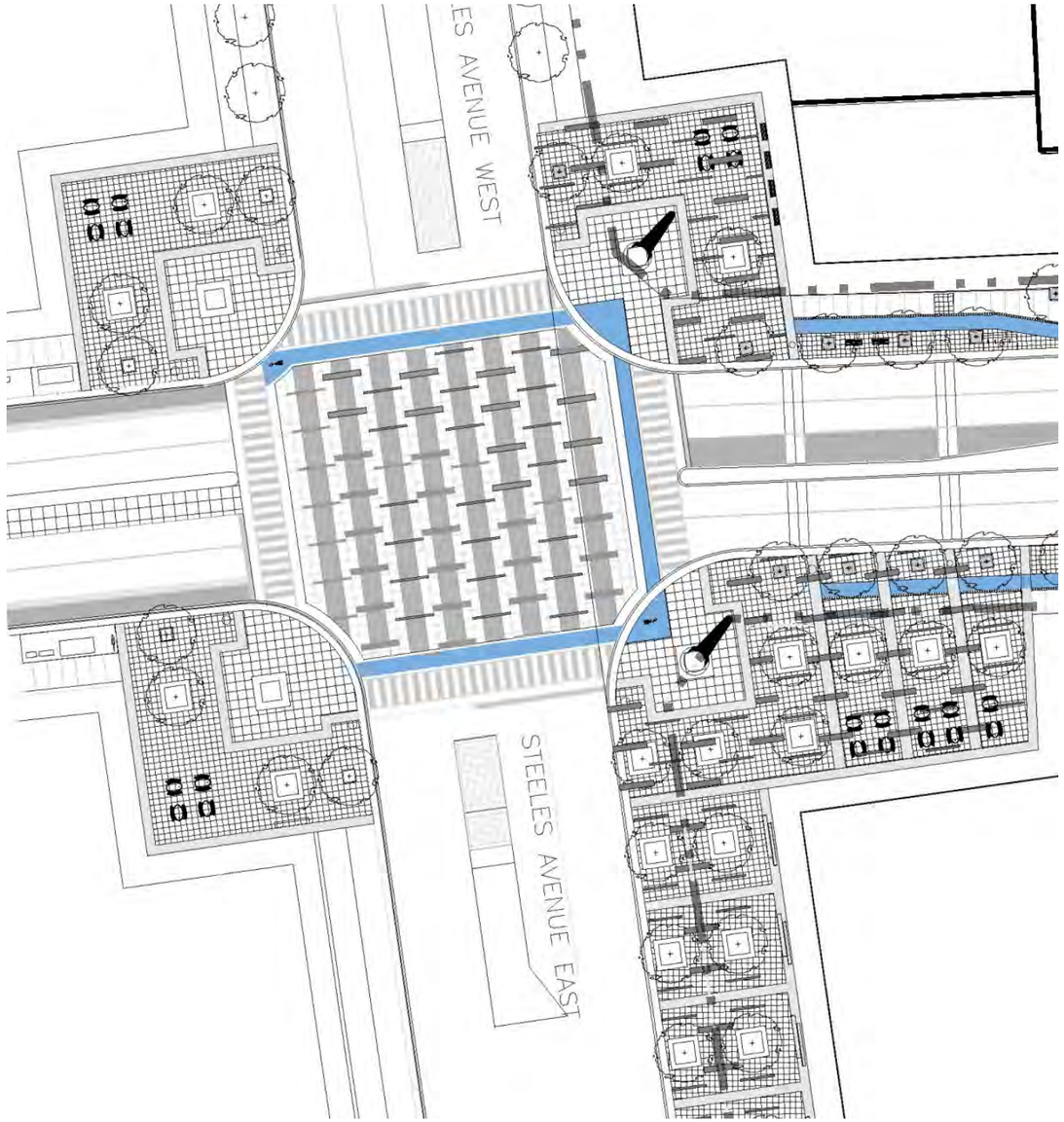
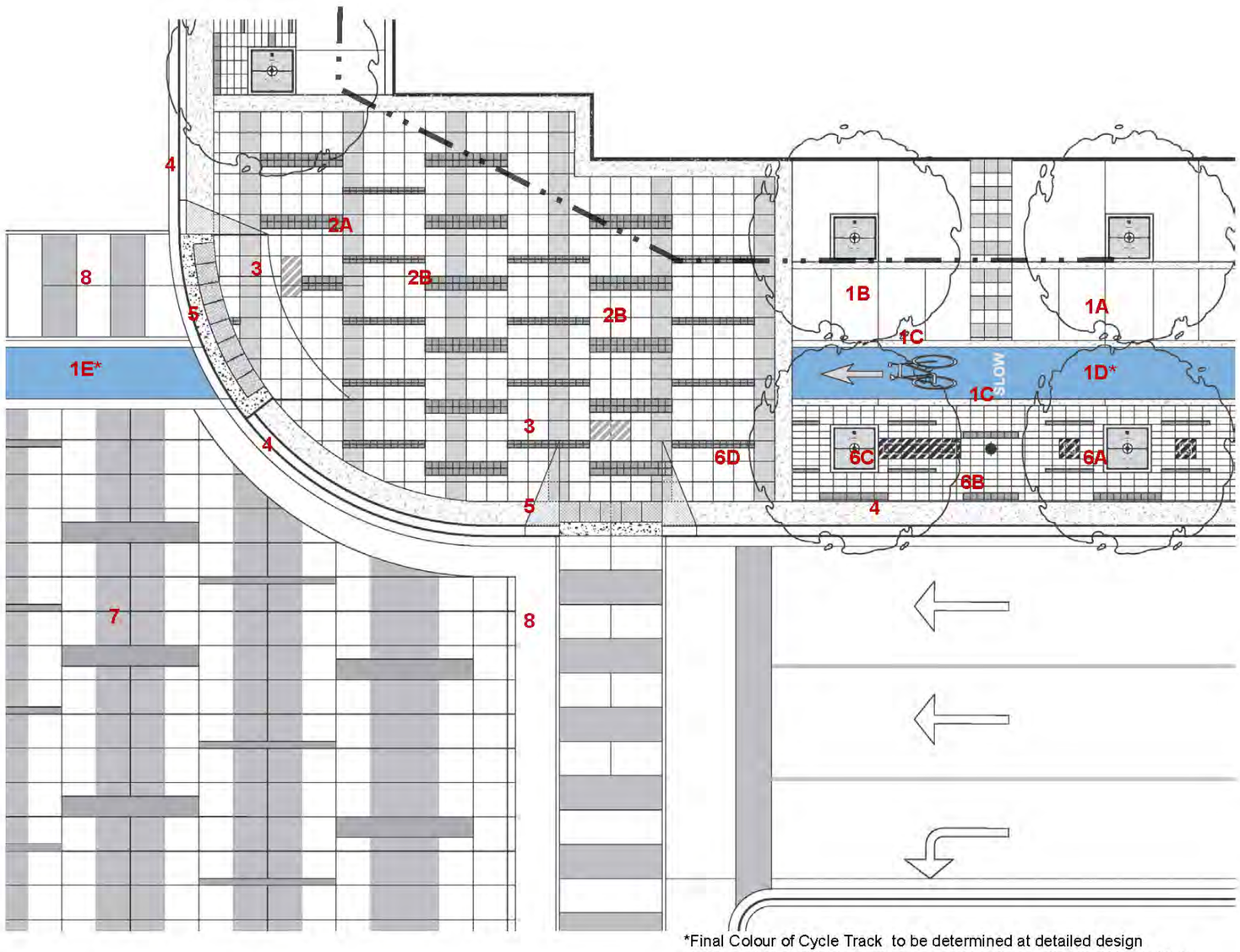


Figure 102: Intersection Detail Area Plan - Yonge Steeles Gateway

Figure 103: Paving Palette

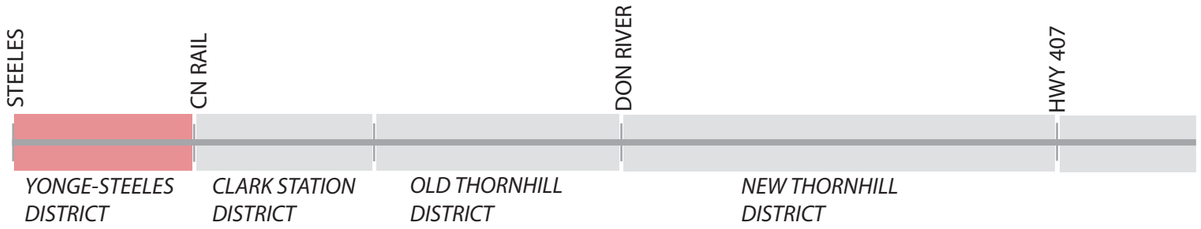
Figure 104: Typical Paving Detail
- Yonge Steeles Gateway

1. Pedestrian Clearway + Cycle Track @ 4.0m wide (minimum):
   - A. C.I.P. Concrete Walkway
   - B. Precast Unit Pavers (Accent)
   - C. Textured Concrete Buffer Strip (@min. 0.2m wide)
   - D. Thermoplastic Cycle Track (@1.5m wide)*
   - E. Unidirectional cross-rides*
2. Pedestrian Realm w/Precast Unit Pavers
   - A. Field Pavers
   - B. "Movement" Accent Strips
3. District ID Engraved Stone Paver
4. Continuity Strip (@ 0.5m to 1.0m wide) includes C.I.P. Concrete Continuous Strip and C.I.P. Concrete Curb
5. TWSI Edge Markings depressed curb
6. Lighting, Furniture + Planting Zone:
   - A. Precast Unit Pavers (Field)
   - B. Precast Unit Pavers Accent Strips
   - C. Street Light /Pedestrian Lighting (16.0m max. Spacing)
   - D. At-grade Tree Grate (2.0m x 2.0m)
7. Thermoplastic Intersection Treatment (i.e. TrafficPatternsXD)
8. Pedestrian Crossing



*Final Colour of Cycle Track to be determined at detailed design stage, and should be in conformance with other cycling facilities in York Region.

4. Special Character Area Customization



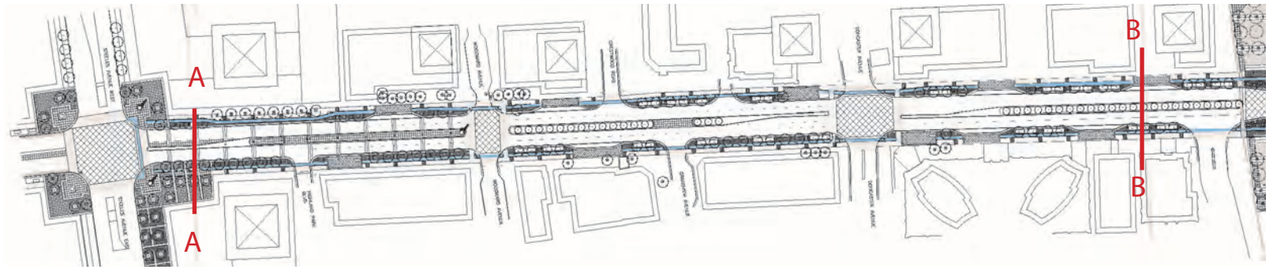


Figure 106: Key Plans

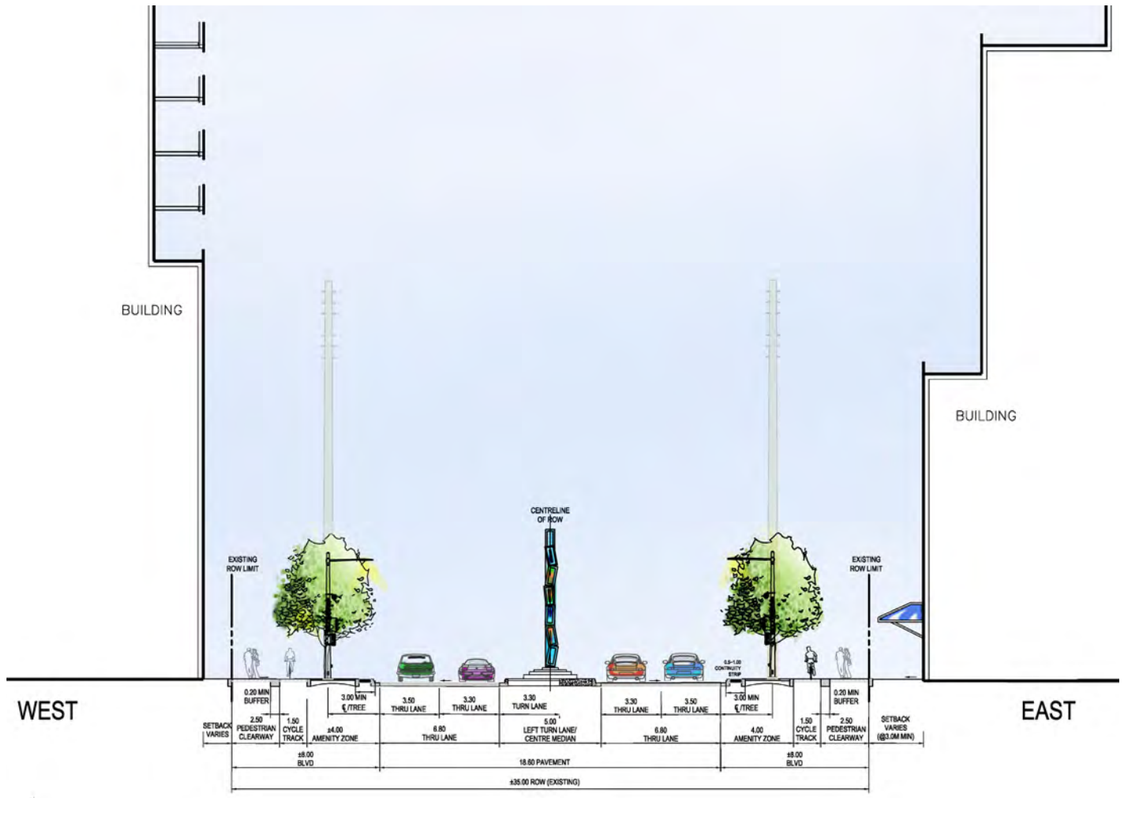


Figure 105: Concept C | Section A-A
Steeles Gateway Median

Figure 107: Concept C | Section B-B
Steeles Gateway Mid-block

NOTE: Cycle Track protected by 2.5m lay-by parking with min. 0.7m "dooring zone" from cycling facilities and by min 0.2m buffer strip adjacent to Pedestrian Clearway

4.3 CN RAIL BRIDGE THRESHOLD

4.3.1 CHARACTER DESCRIPTION

The CN Rail Bridge Threshold is characterized by a multi-use public space located on a decked surface contiguous with the streetscape over the CN Rail track. Located near the highest topographic point of Yonge Street, this decked bridge provides excellent views to the north. The potential exists for a passive and active recreational space with a generous pedestrian realm and the opportunity to integrate public art.

4.3.2 DESIGN GUIDELINES

Surface Treatments

- Surface treatment shall consist of 60% hard and 40% soft surface;
- Pedestrian paving would be similar to above;
- Cycling Facilities: Contrasting colour to pedestrian paving, such as “Evergreen”. could be applied to the surface of cycling;
- Finished surfaces of cycling facilities shall be smooth and consistent in texture such as StreetBondCL as indicated in the Detailed Design Guidelines Report;

Speciality Lighting

- Special feature lighting of vegetation, gathering nodes and activity areas will provide an inviting public space during all times.

Planting

- Green roof deck planters with rainwater capture system connected to the rail cut are recommended;
- All planting shall be consistent with York Region plant selections for native and salt tolerant species.
- Soil volume and drainage for planting of trees in raised planters as indicated in York Region Street Tree Preservation And Planting Design Guidelines shall be observed;

Parking

- On-street parking shall not occur on the CN Rail Bridge.

Furniture

- Finishes to be used include natural metal, glass, wood, and concrete, unique to place.

Boulevard Paving Materials

- The field shall be natural concrete with unit paver highlights at edges; Unit pavers shall be used with charcoal and brick red as feature colours.
- Cycling facilities: smooth and consistent texture material such as StreetBondCL.

Colour Palette

- The colour palette of pedestrian areas shall consist of neutral colours, allowing the infrastructure and natural features be the focus;
- The colour palette of cycling facilities shall distinctively contrast that applied to the pedestrian areas.

Finishes

- Finishes to be used include natural metal, glass, wood, and concrete, unique to place.
- Finish to the cycling facilities shall be smooth and consistent in texture.

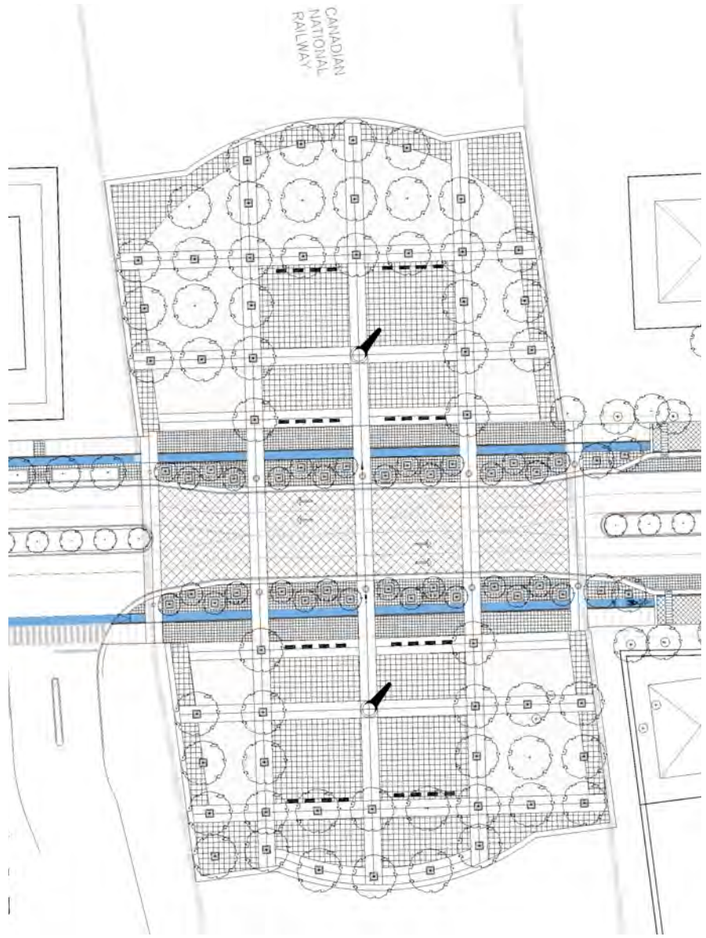
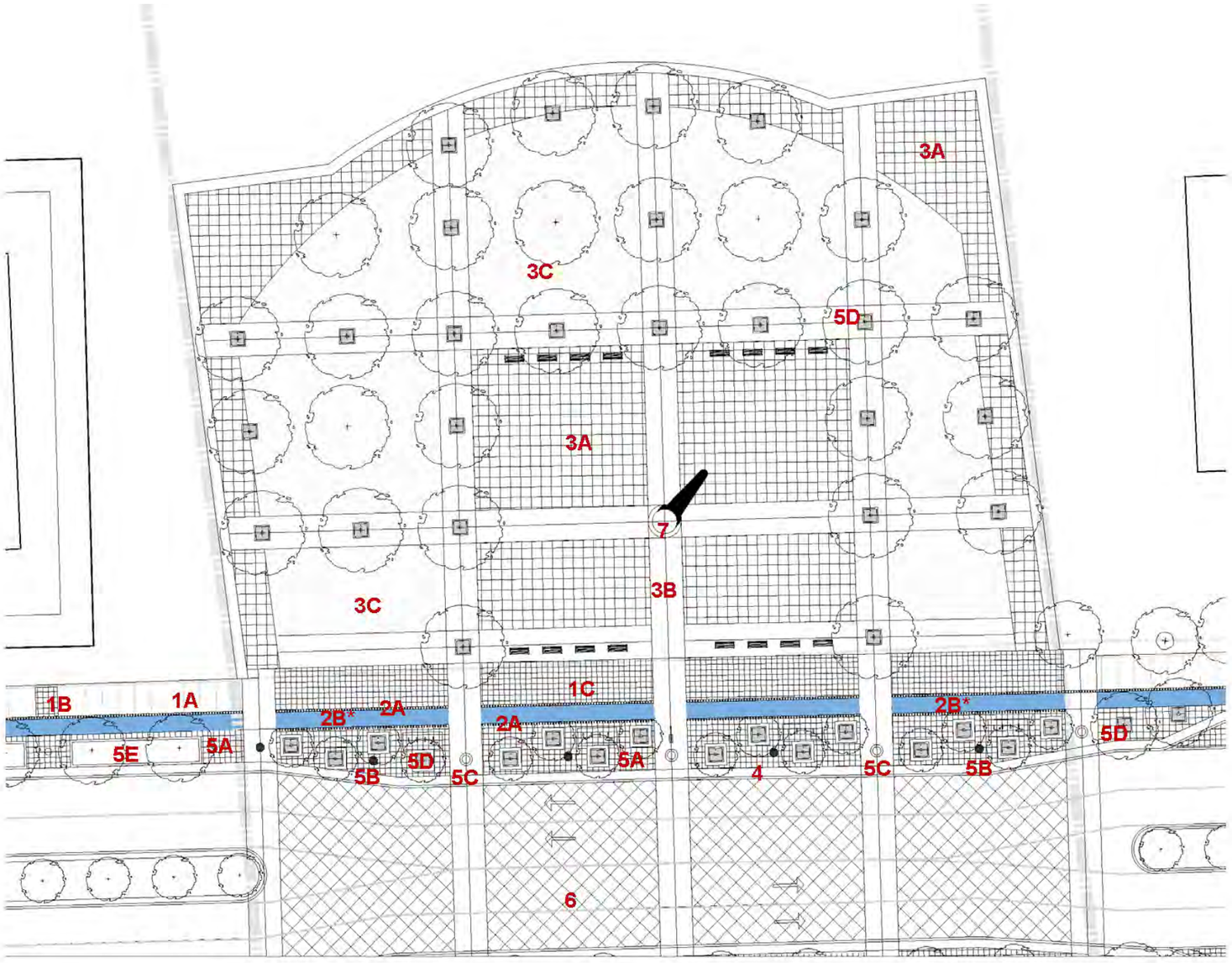


Figure 108: Detail Plan - CN Rail Bridge

4. Special Character Area Customization

Figure 109: Typical Paving Detail
- CN Rail Threshold

1. Pedestrian Clearway (@3.0m wide)
   - A. C.I.P. Concrete Walkway
   - B. Precast Unit Pavers (Accent)
   - C. Precast Unit Pavers w/movement accent pavers (charcoal + brick red)
2. On-Boulevard Cycle Track (@ 2.0m max. width)
   - A. Textured Concrete Buffer Strip (@min. 0.2m wide)
   - B. Thermoplastic Cycle Track (@1.5m wide)*
3. Pedestrian Realm w/Precast Unit Pavers
   - A. Precast Unit Pavers
   - B. C.I.P. Concrete Banding
   - C. Soft Green Space w/Large Shade Trees
4. Continuity Strip (@ 0.5m to 1.0m wide) includes C.I.P. Concrete Continuous Strip and C.I.P. Concrete Curb
5. Lighting, Furniture + Planting Zone:
   - A. Precast Unit Pavers w/movement accent pavers (charcoal + brick red)
   - B. Street Light /Pedestrian Lighting (16.0m max. Spacing)
   - C. Special Feature Lighting
   - D. At-grade Tree Grate (2.0m x 2.0m)
   - E. Raised Planters
6. Special Treatment of Roadway (i.e. TrafficPatternsXD or Precast Unit Pavers)
7. Public Art/Landmark Feature



*Final Colour of Cycle Track to be determined at detailed design stage, and should be in conformance with other cycling facilities in York Region.

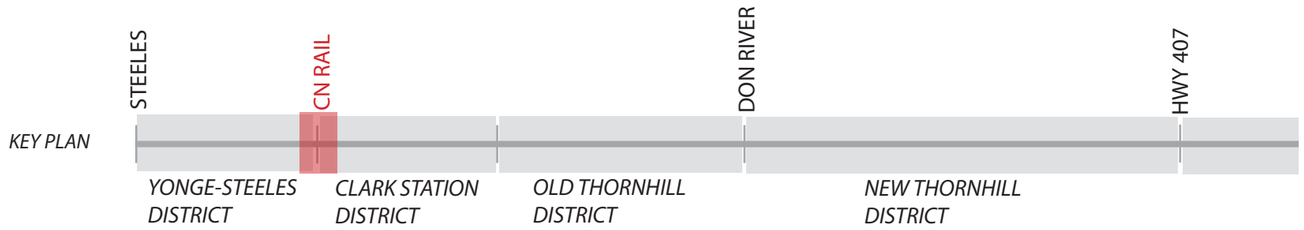


Figure 110: Key Plans

Figure 111, 112, 113 & 114: Finishes and Colour Palette

Figure 115, 116 & 117: Specialty Lighting

4.4 CLARK STATION DISTRICT

4.4.1 CHARACTER DESCRIPTION

The Clark Station District is characterized by medium and high density, mixed use and residential buildings in a green park-like setting. A variety of setbacks occur here with some retail uses at grade. Clark Subway Station is highlighted as a public plaza space with the opportunity for public art.

4.4.2 DESIGN GUIDELINES

Surface Treatments

- An emphasis is placed on green surfaces (55% soft), with some paved / hard surfaces (45%);
- Continuous pedestrian surface material with accent treatments to highlight special nodes and / or edges.
- Finished surfaces of cycling facilities shall be smooth and consistent in texture such as Street Bond CL as indicated in the Detailed Design Guidelines Report.

Speciality Lighting

- A small amount of ambient light from adjacent developments;
- Special feature lighting of sitting areas shall be used at Clark Station public plaza.

Planting

- Planting within this district shall connect with adjacent landscape development;
- Large shade street trees shall be planted in double rows where possible;
- Curb planting areas shall be filled with ground covering perennials;
- All planting shall be consistent with York Region plant selections for native and salt tolerant species;
- Rainwater / stormwater - capture systems and subgrade drainage should be used to minimize run-off and provide irrigation.

Parking

- On-street parking shall not occur within the Clark Station District.

Furniture

- Street furniture shall be located at transit stops, Clark Station subway plaza and other small social nodes.

Boulevard Paving Materials

- Pedestrian Clearway Zone: natural concrete with saw cut and expansion joints to form reduced panel design;
- Furniture and Planting Zone: Linear unit pavers with beige as the feature colour.

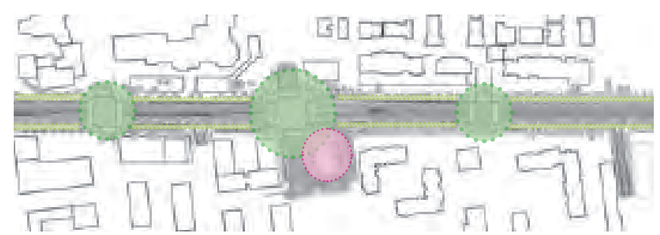
Colour Palette

- Strong neutral colour scheme with beige accent enhancements used in banding and intermixed with linear unit stone paving pattern;
- Utilize light and medium grey pavers in a flexible stripe pattern to enforce the sense of an intimate and livable residential area;
- Bright colours shall be used on banners and displays;
- Consistent street print is to be used in bicycle lanes.

Finishes

- Finishes to be used include natural metal, concrete, and stone;

Figure 118: Planting Concept



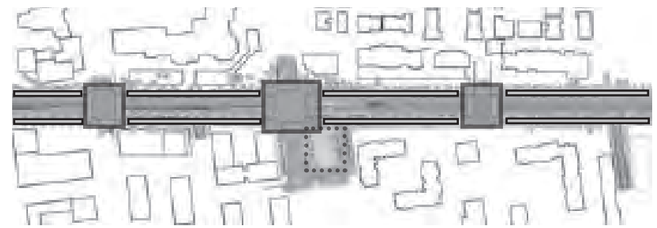
Legend

Intersection Planting Treatment

Linkage Planting Treatment

Special Highlight Feature

Figure 119: Paving Concept



Legend

Intersection Paving Treatment

Linkage Paving Treatment

Special Highlight Feature

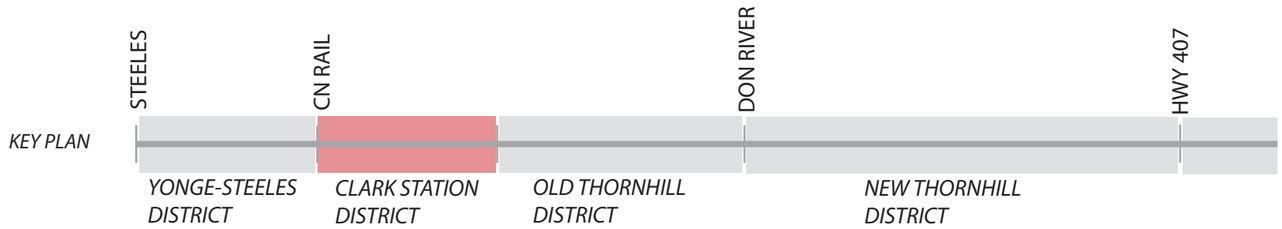


Figure 122: Key Plan

Figure 120 & 121: Subway Station Entrance Plaza

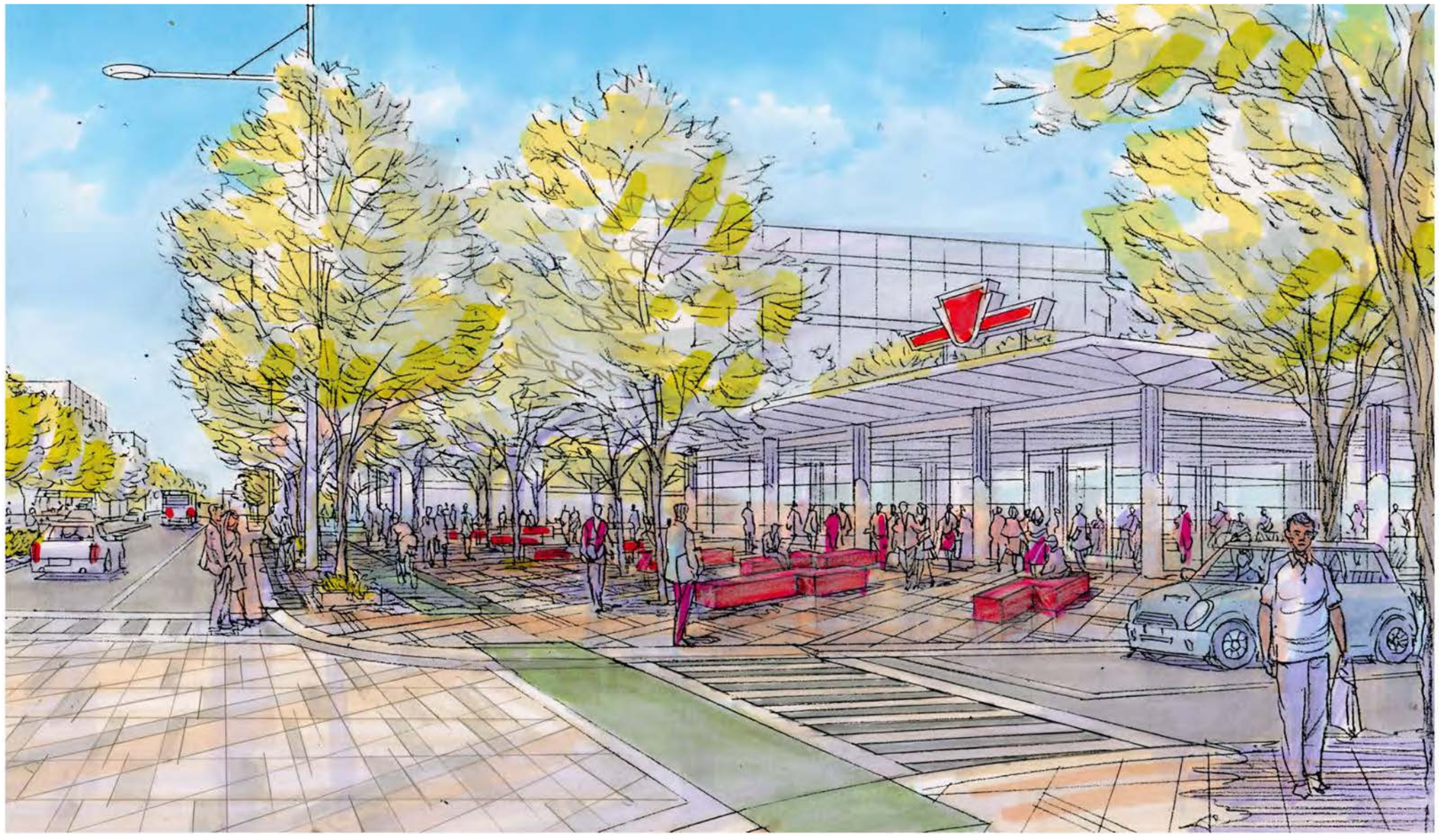


Figure 123: Perspective of Clark Station

4. Special Character Area Customization

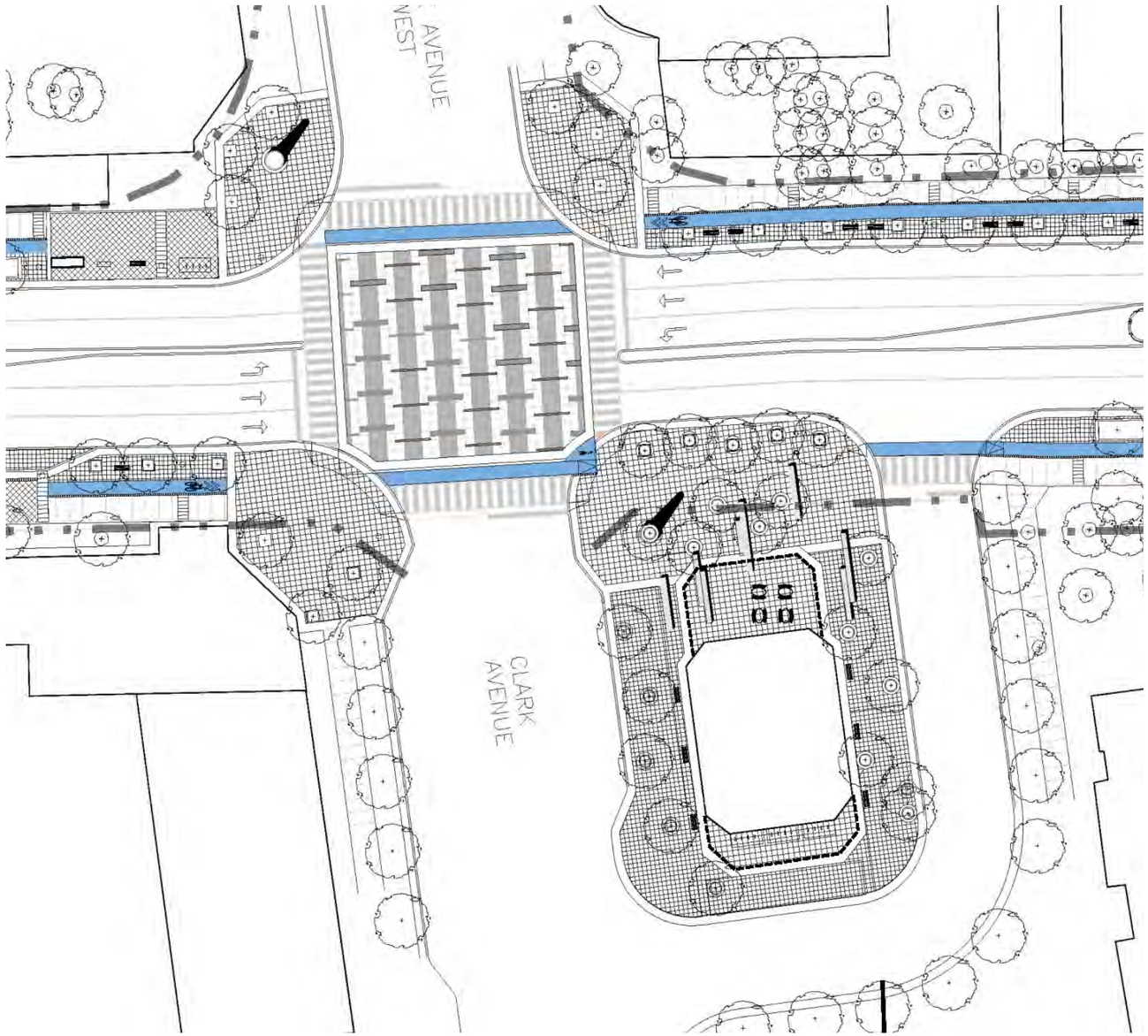
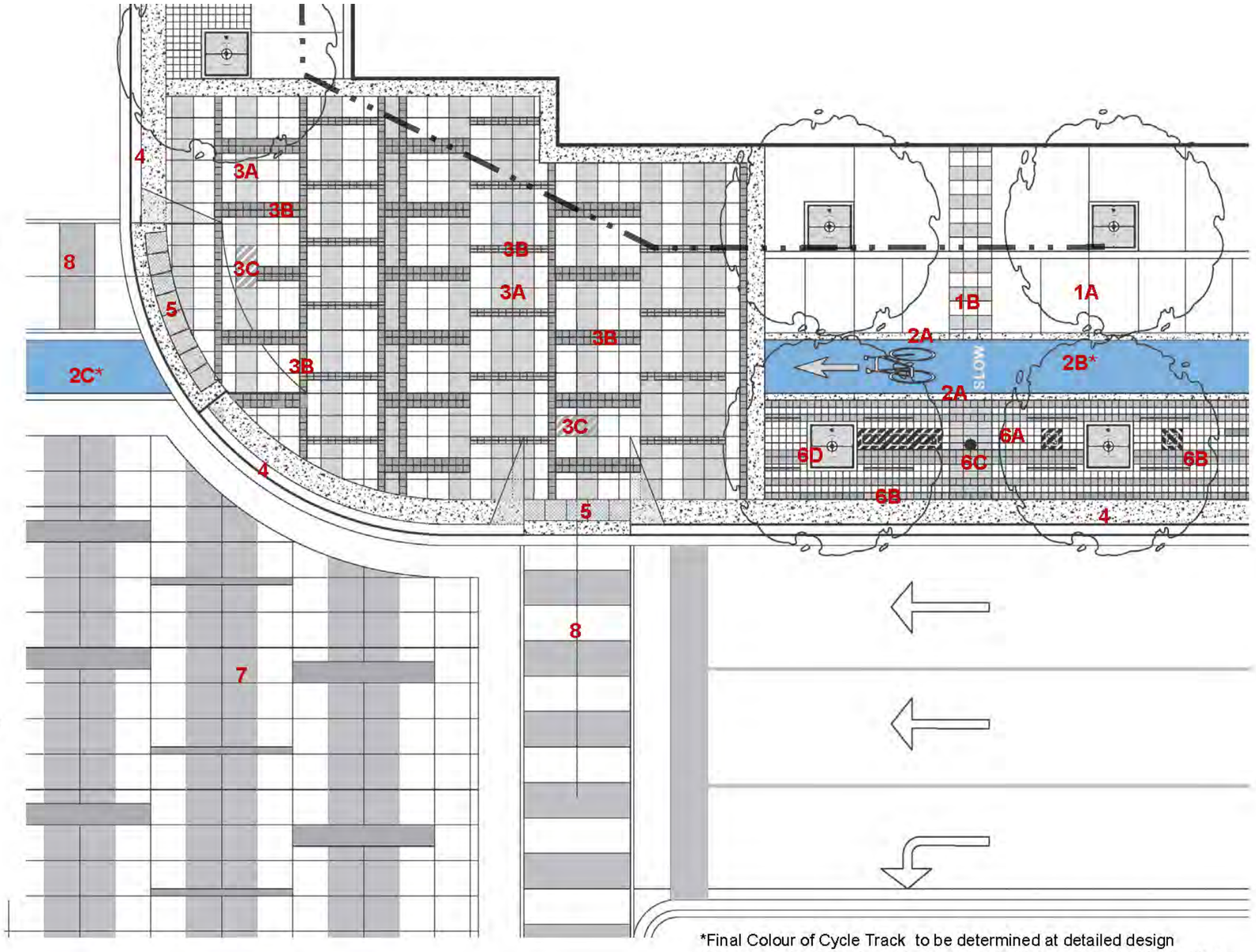


Figure 124: Intersection Detail Area Plan - Clark Station

Figure 125: Paving

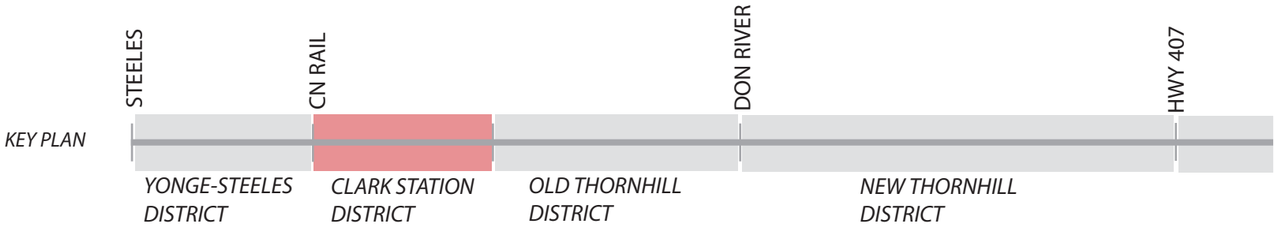
Figure 126: Typical Paving Detail
- Clark Station District

1. Pedestrian Clearway (@3.0m wide)
   A. C.I.P. Concrete Walkway
   B. Precast Unit Pavers (Accent)
2. Cycle Track (@ 2.0m max. width)
   A. Textured Concrete Buffer Strip (@min. 0.2m wide)
   B. Thermoplastic Cycle Track (@1.5m wide)*
   C. Unidirectional cross-rides*
3. Pedestrian Realm w/Precast Unit Pavers
   A. Precast Unit Pavers (Field Pavers)
   B. Movement" Accent Strips
   C. District ID Engraved Stone Paver
4. Continuity Strip (@ 0.5m to 1.0m wide) includes C.I.P. Concrete Continuous Strip and C.I.P. Concrete Curb
5. TWSI Edge Markings depressed curb
6. Lighting, Furniture + Planting Zone:
   A. Precast Unit Pavers (Field)
   B. Precast Unit Pavers Accent Strips
   C. Street Light /Pedestrian Lighting (16.0m max. Spacing)
   D. At-grade Tree Grate (2.0m x 2.0m)
7. Thermoplastic Intersection Treatment (i.e.TrafficPatternsXD)
8. Pedestrian Crossing



*Final Colour of Cycle Track to be determined at detailed design stage, and should be in conformance with other cycling facilities in York Region.

4. Special Character Area Customization



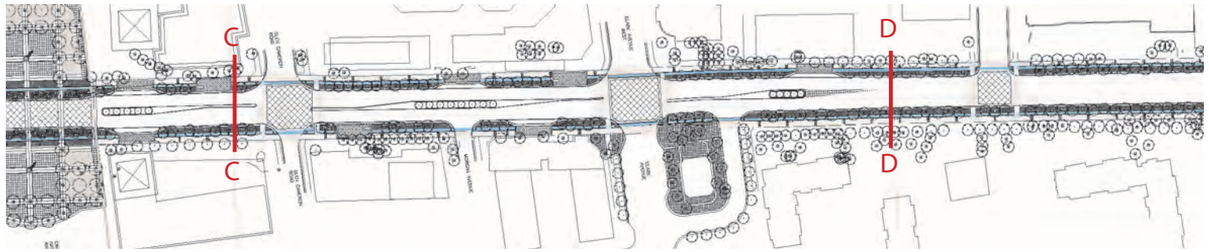


Figure 127: Key Plans

Figure 128: Concept C | Section C-C
Clark District Mid-block

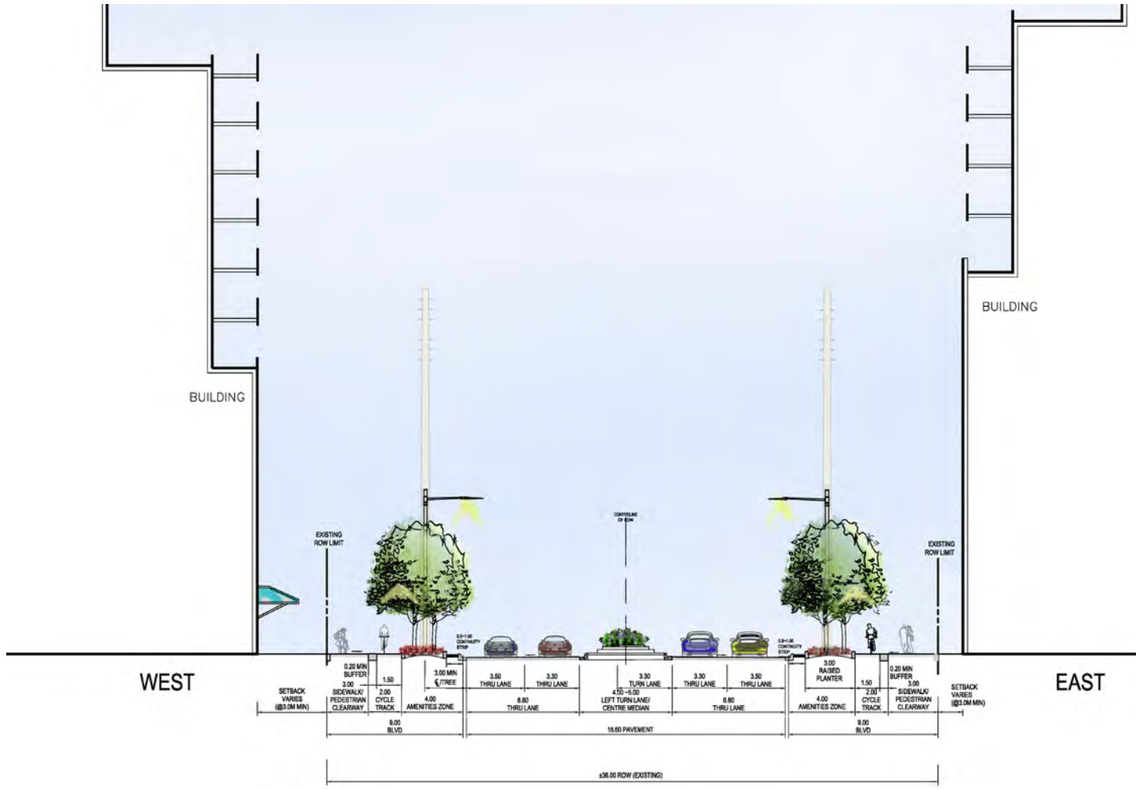


Figure 129: Concept C | Section D-D
Clark District

4.5 OLD THORNHILL VILLAGE DISTRICT

4.5.1 CHARACTER DESCRIPTION

Old Thornhill Village District has a distinctive heritage neighbourhood identity with a mixture of old and new low rise development. The village character relates to Don River Valley and is supported through future contextual and infill development. Key social spaces are located at an expanded market area, adjacent to Thornhill Public School, and a linear park south of John Street. Heritage perennials and colourful annuals (in partnership with local municipalities, BIAs, and private properties, shall be used to enhance the heritage village atmosphere.

4.5.2 DESIGN GUIDELINES

Surface Treatments

- A balance of hard and soft surfaces (50%/50%);
- A continuous pedestrian surface material shall be utilized throughout the district;
- Accent surface treatments shall be used to highlight special nodes and / or edges;
- Finished surfaces of cycling facilities shall be smooth and consistent in texture such as StreetBondCL as indicated in the Detailed Design Guidelines Report.

Speciality Lighting

- Some ambient light from store fronts and building foyers;
- Small scale special lighting of street trees, seasonal features and market square.

Planting

- Streetscape planting is to include detailed floral and seasonal displays in conjunction with community and business initiatives;
- Planters shall be located where possible;
- Hanging baskets are recommended; in partnership with local municipalities, BIAs and private property owners;
- Heritage perennials and colourful annuals shall be used to enhance the heritage village atmosphere;
- All planting shall be consistent with York Region plant selections for native and salt tolerant species;
- Rainwater / stormwater -capture systems and subgrade drainage should be used to minimize run-off and provide irrigation.

Parking

- On-street parking is to be located in lay-bys, where appropriate;

Furniture

- Street furniture shall be located at transit stops, market square and other small social nodes.

Boulevard Paving Materials

- Pedestrian Clearway Zone: natural concrete with saw cut and expansion joints to form reduced panel design;
- Furniture and Planting Zone: Linear unit pavers with brick red as a feature colour.

Colour Palette

- Strong neutral colour scheme with red brick accent enhancements used in banding and intermixed with linear unit stone paving pattern;
- Inspired by the heritage of the area, pavers with traditional red brick colour and size are used to respect to the inner character of the neighborhood;
- Bright colours are to be used on banners and display;
- Consistent street print is to be used in bicycles lanes.

Finishes

- Finishes to be used include natural metal, concrete, brick and stone.

Figure 130: Planting Concept

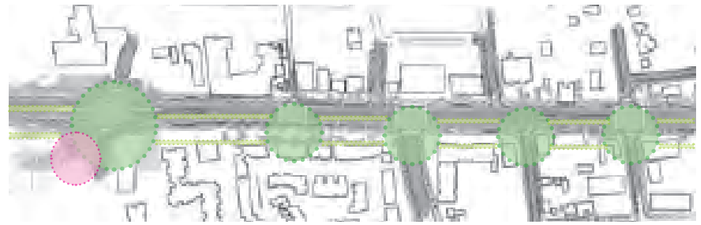
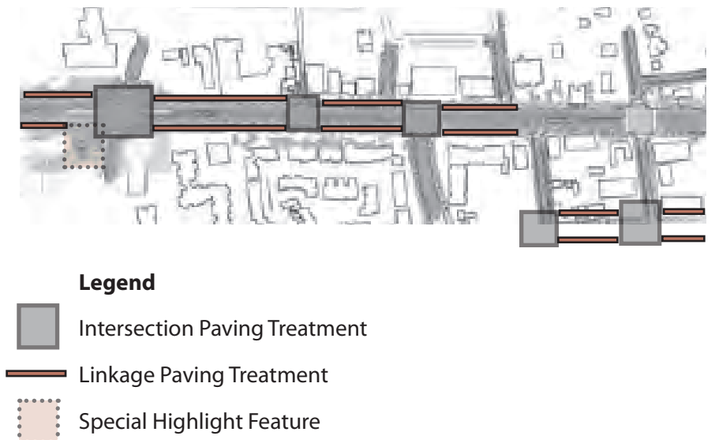


Figure 131: Paving Concept



4. Special Character Area Customization

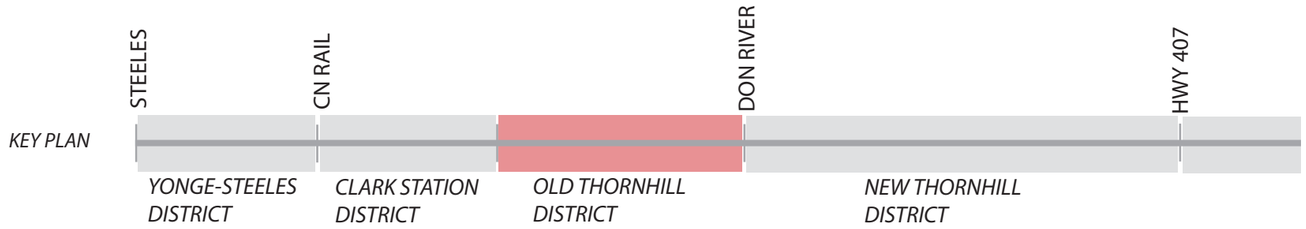


Figure 136: Key Plans

Figure 132 & 133: Specialty Lighting

Figure 134: Planting

Figure 135: Signage

Figure 137: Perspective of Old Thornhill Market Square

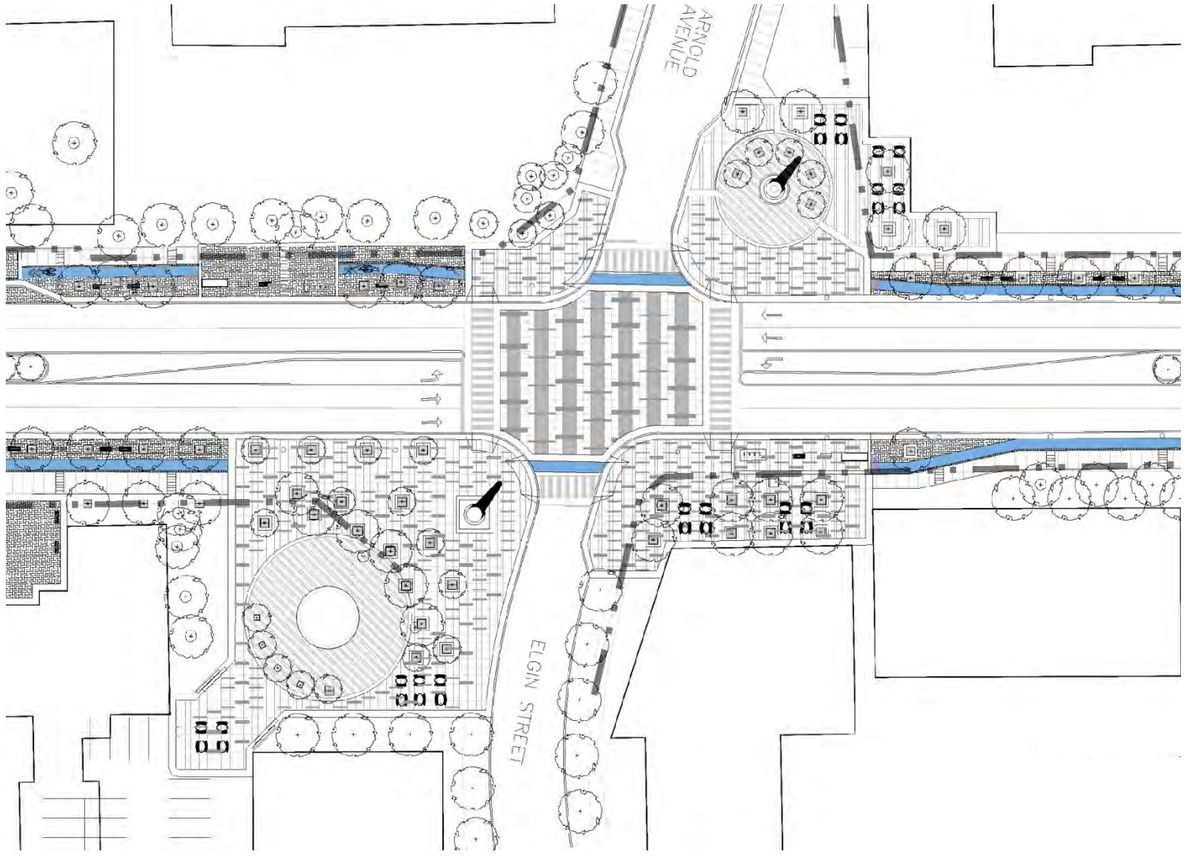


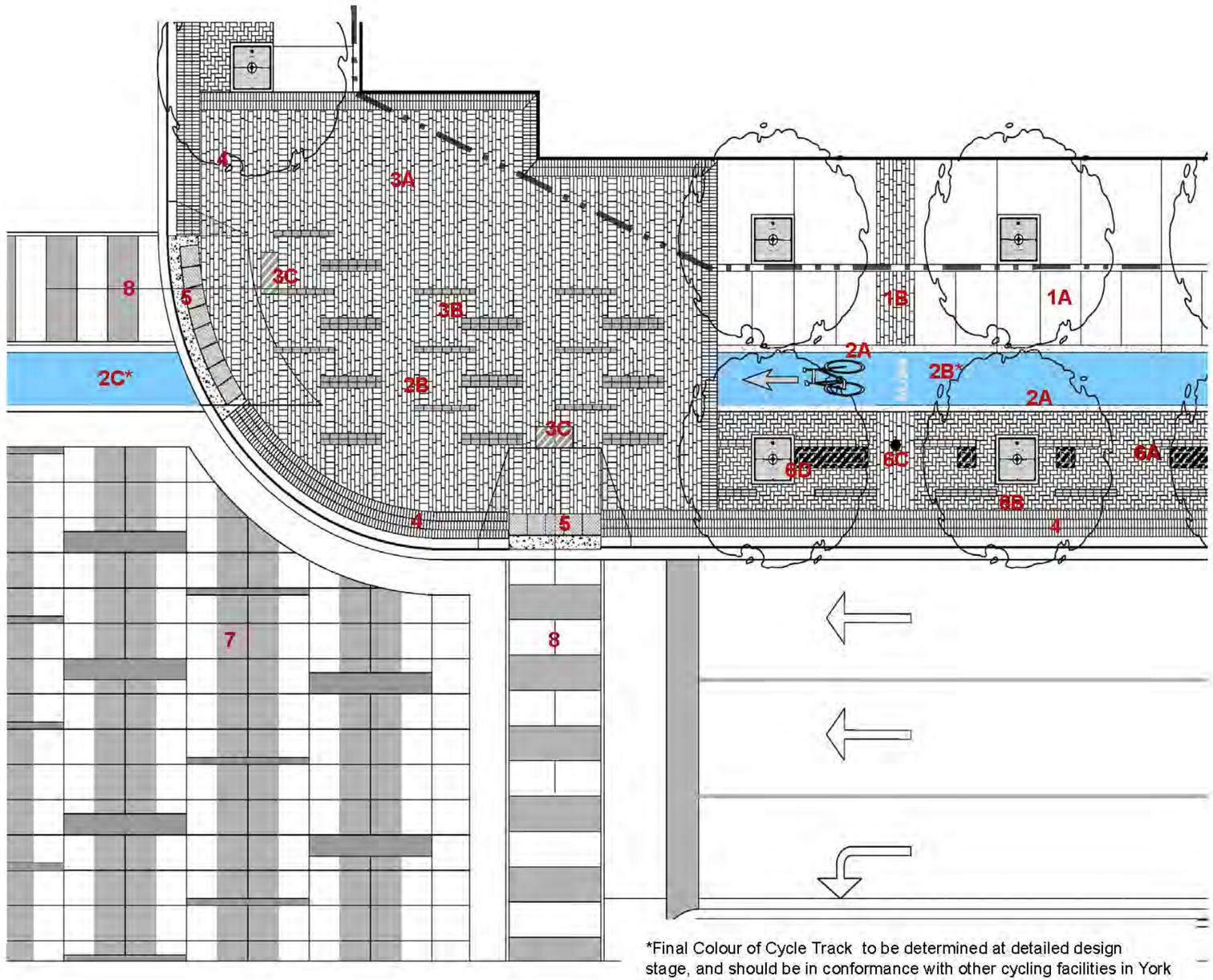
Figure 138: Intersection Detail Area Plan - Old Thornhill District

Figure 139 & 140: Paving Imagery

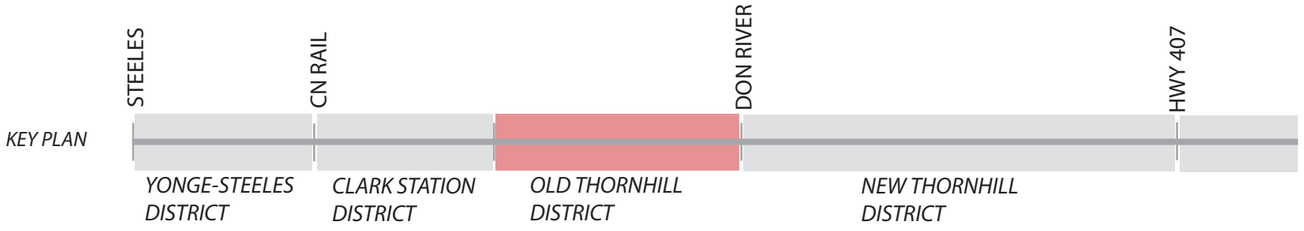
4. Special Character Area Customization

Figure 141: Typical Paving Detail
- Old Thornhill District

1. Pedestrian Clearway (@2.5m to 3.0m wide)
   A. C.I.P. Concrete Walkway
   B. Precast Unit Pavers (Accent)
2. Cycle Track (@ 2.0m max. width)
   A. Textured Concrete Buffer Strip (@min. 0.2m wide)
   B. Thermoplastic Cycle Track (@1.5m wide)*
   C. Unidirectional cross-rides*
3. Pedestrian Realm w/Precast Unit Pavers
   A. Precast Unit Pavers (Field Pavers)
   B. Movement" Accent Strips
   C. District ID Engraved Stone Paver
4. Continuity Strip (@ 0.5m to 1.0m wide) includes Precast Unit Pavers Continuous Strip and C.I.P. Concrete Curb
5. TWSI Edge Markings depressed curb
6. Lighting, Furniture + Planting Zone:
   A. Precast Unit Pavers (Field)
   B. Precast Unit Pavers Accent Strips
   C. Street Light /Pedestrian Lighting (16.0m max. Spacing)
   D. At-grade Tree Grate (2.0m x 2.0m)
7. Thermoplastic Intersection Treatment (i.e. TrafficPatternsXD)
8. Pedestrian Crossing



*Final Colour of Cycle Track to be determined at detailed design stage, and should be in conformance with other cycling facilities in York Region.



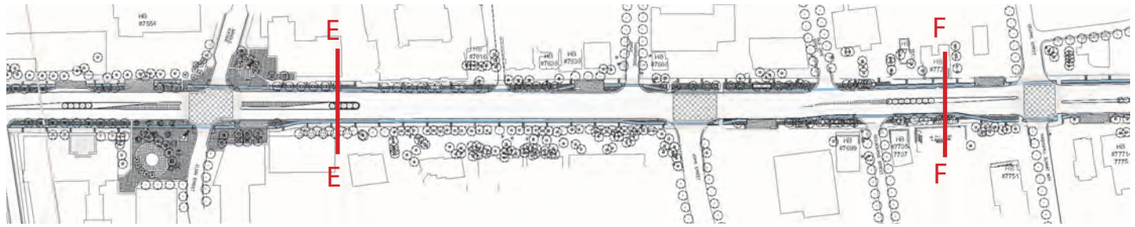


Figure 143: Key Plans

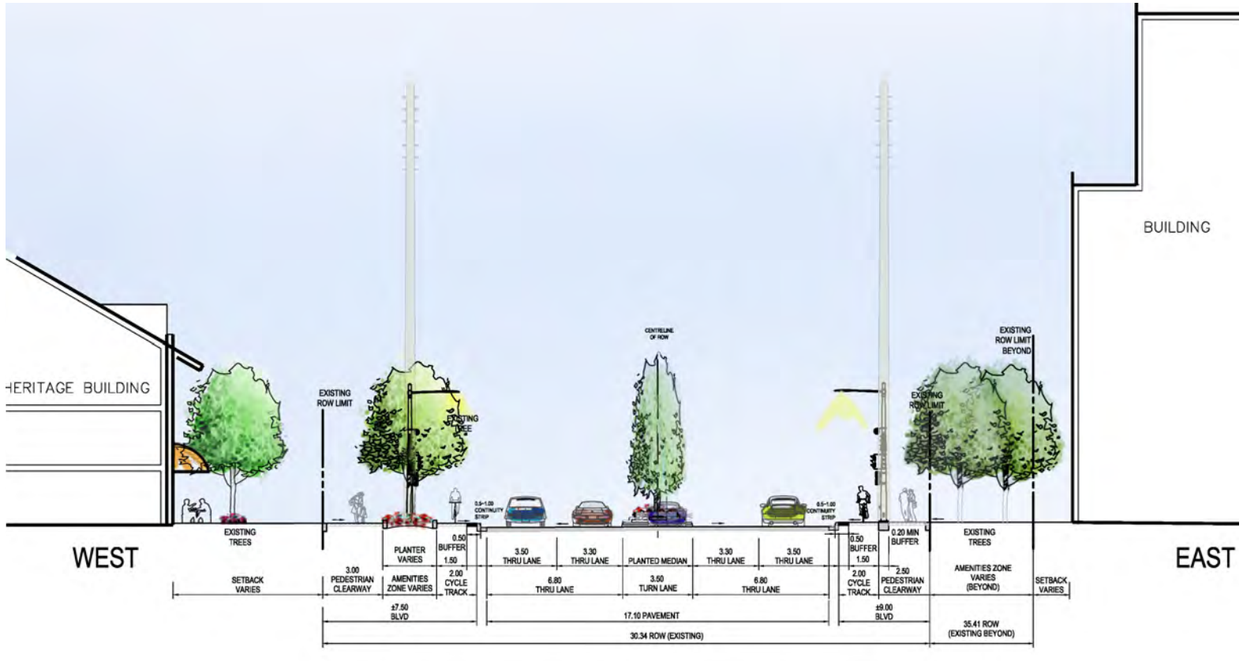


Figure 142: Concept C | Section E-E
Old Thornhill- Approach to Intersection

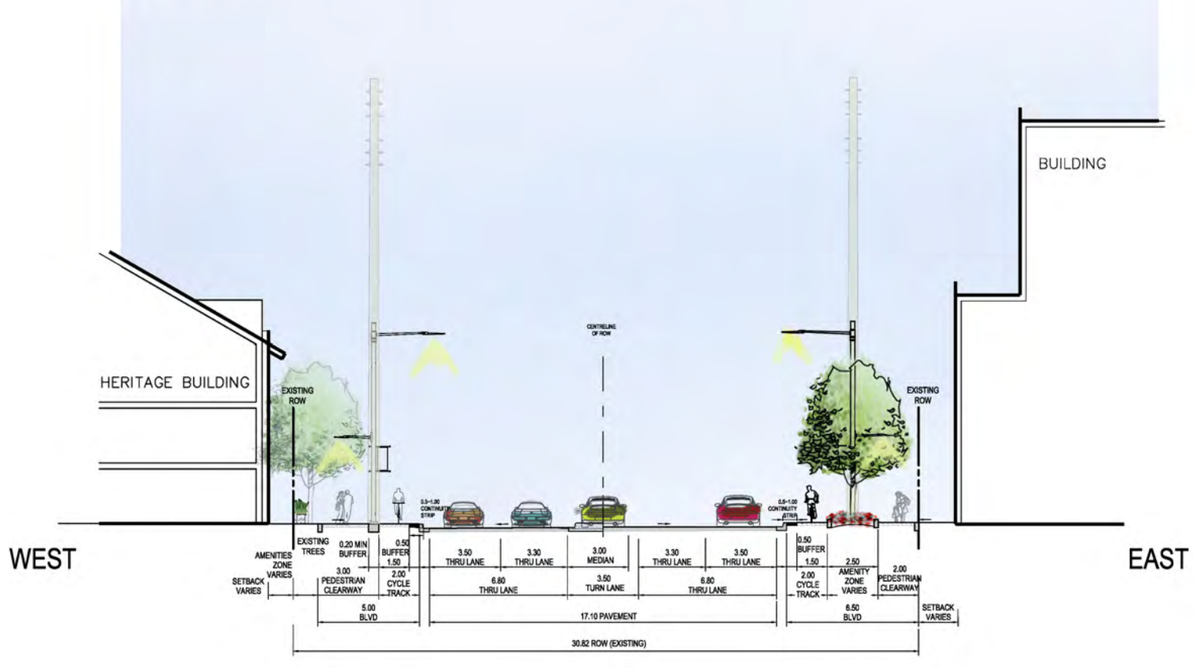


Figure 144: Concept C | Section F-F
Old Thornhill (Heritage)

4.6 DON RIVER BRIDGE THRESHOLD

4.6.1 CHARACTER DESCRIPTION

The character of the Don River Bridge Threshold utilizes a widened streetscape pedestrian deck over the proposed subway extension as it spans the Don River Valley. There are opportunities for public art, viewing into the valley, interpretive signage, and areas for small gatherings and events.

4.6.2 Design Guidelines

Surface Treatments

- Surface treatment shall consist of 60% hard and 40% soft surface.
- A continuous pedestrian surface material shall be utilized throughout the district;
- Accent surface treatments shall be used to highlight special nodes and / or edges;
- Finished surfaces of cycling facilities shall be smooth and consistent in texture such as StreetBondCL as indicated in the Detailed Design Guidelines Report;

Speciality Lighting

- Limited additional lighting of the streetscape and sitting areas to protect the natural valley area.
- Finished surfaces of cycling facilities shall be smooth and consistent in texture such as StreetBondCL as indicated in the Detailed Design Guidelines Report;

Planting

- Green roof deck planters with rainwater capture system connected to the Don River Valley stormwater management ponds shall be utilized;
- All planting shall be consistent with York Region plant selections for native and salt tolerant species.

Parking

- On-street parking shall not occur on the Don River Bridge.

Furniture

- Street furniture will be located on the pedestrian deck to address views and interpretive features.

Boulevard Paving Materials

- The field shall be natural concrete with unit paver highlights at edges;
- Unit pavers shall be used with blue as feature colour to tie into the natural elements in the valley below;
- Panels of walkable glass block surfacing shall be used to create a greater visual connection to the surrounding natural features.

Colour Palette

- The colour palette shall consist of neutral colours allowing the infrastructure and natural features be the focus.
- Cycling Facilities: Contrasting colour to pedestrian paving, such as “Evergreen”. could be applied to the surface of cycling;

Finishes

- Finishes to be used include natural metal, glass, concrete, unique to place.

Figure 148: Specialty Lighting

Figure 145, 146 & 147 : Finishes and Materials Imagery

Figure 149: Planting

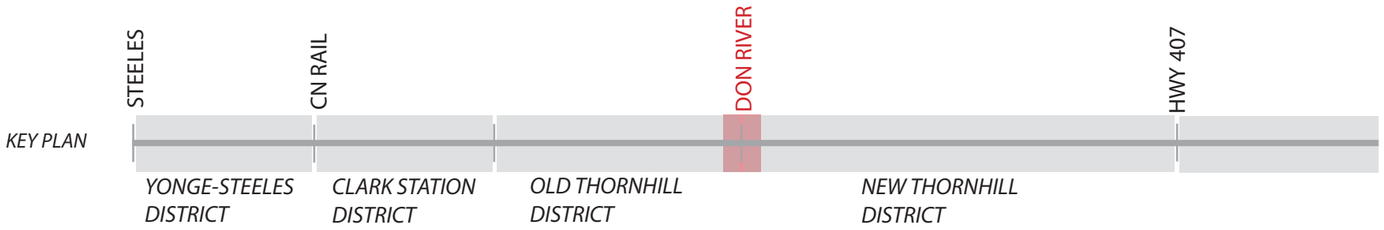


Figure 151: Key Plans

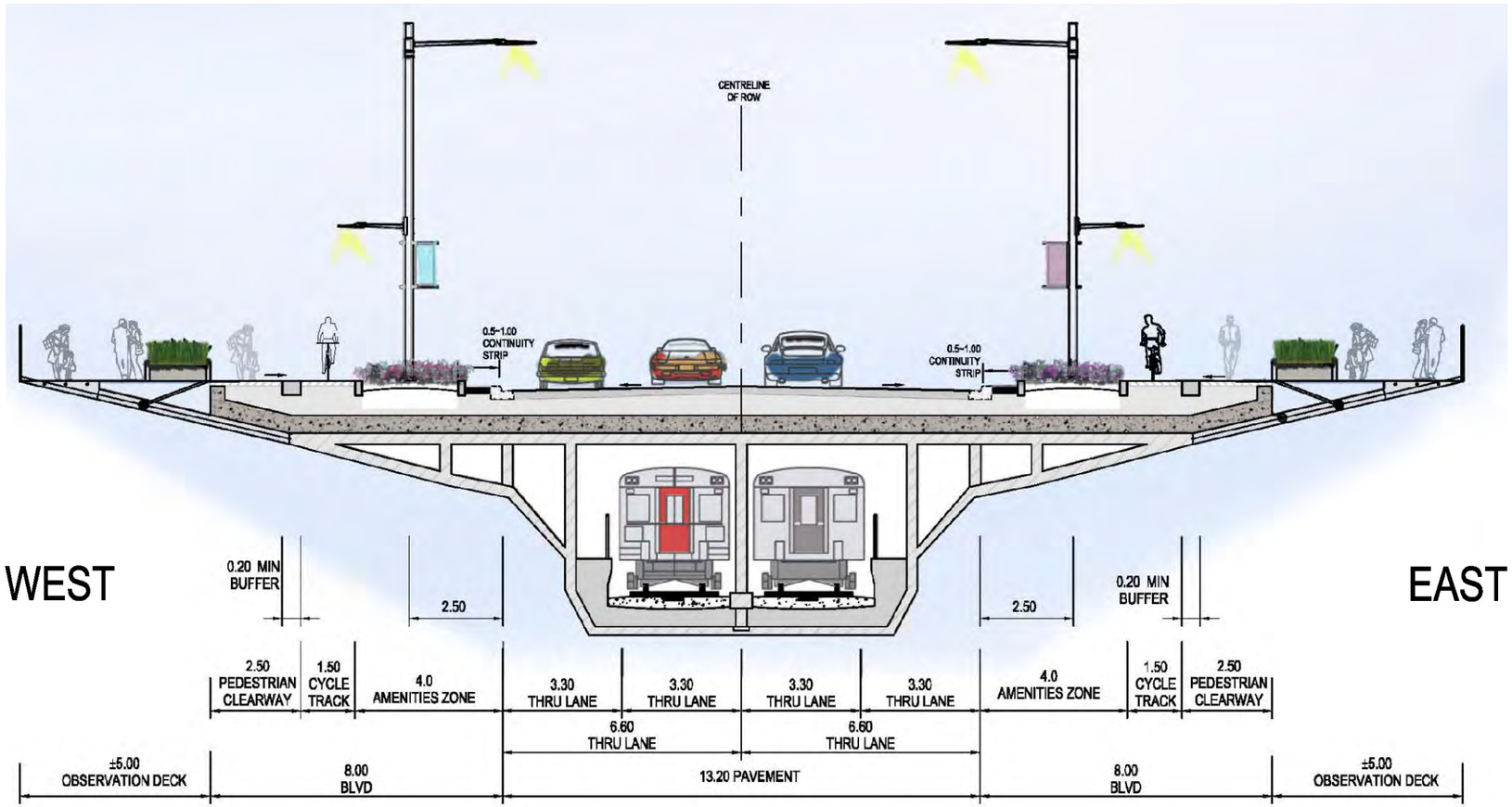


Figure 150: Concept C | Section G-G
Thornhill (Bridge)

4.7 NEW THORNHILL VILLAGE DISTRICT

4.7.1 CHARACTER DESCRIPTION

The New Thornhill Village District has a newer mixed use medium density community character reinforced with future development along a unified street edge. The streetscape character connects to the Don River Valley with a double row of street trees along the widened right-of-way.

4.7.2 DESIGN GUIDELINES

Surface Treatments

- A balance of hard and soft surfaces (50%/50%);
- A continuous pedestrian surface material shall be utilized throughout the district;
- Accent surface treatments shall be used to highlight special nodes and / or edges.
- Finished surfaces of cycling facilities shall be smooth and consistent in texture such as StreetBondCL as indicated in the Detailed Design Guidelines Report;

Speciality Lighting

- Some ambient light from store fronts and building foyers;
- Small scale specialty lighting used to highlight street trees, seasonal features, public plazas at subway stations and mid-block parkettes.

Planting

- Planting is to include detailed floral and seasonal displays in conjunction with community and business initiatives;
- Planters shall be located where possible;
- Hanging baskets are recommended;
- Heritage perennials and colourful annuals shall be used to enhance the connection to Old Thornhill village atmosphere;
- All planting shall be consistent with York Region plant selections for native and salt tolerant species;
- Rainwater / stormwater -capture systems and subgrade drainage should be used to minimize run-off and provide irrigation.

Parking

- On-street parking is to be located in lay-bys, where appropriate.

Finishes

- Finishes to be used include natural metal, concrete, brick and stone.

Colour Palette

- The colour palette shall consist of neutral colours allowing the infrastructure and natural features be the focus.
- Cycling Facilities: Contrasting colour to pedestrian paving, such as “Evergreen”. could be applied to the surface of cycling;

Figure 152: Planting Concept

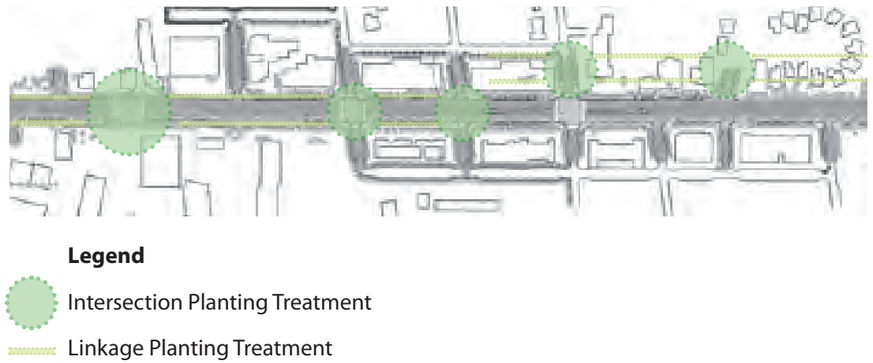
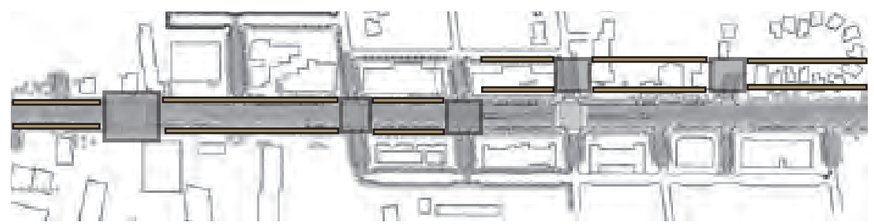


Figure 153: Paving Concept



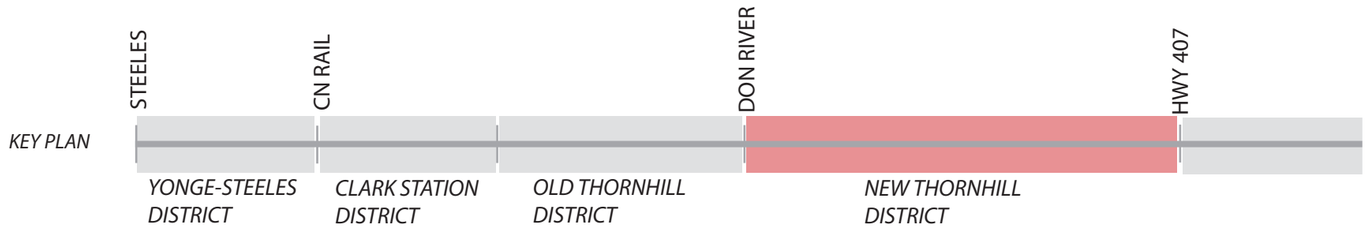


Figure 158: Key Plan

Figure 154 & 155: Planting

Figure 156 & 157: Specialty Lighting

Figure 159: Specialty Paving

4. Special Character Area Customization

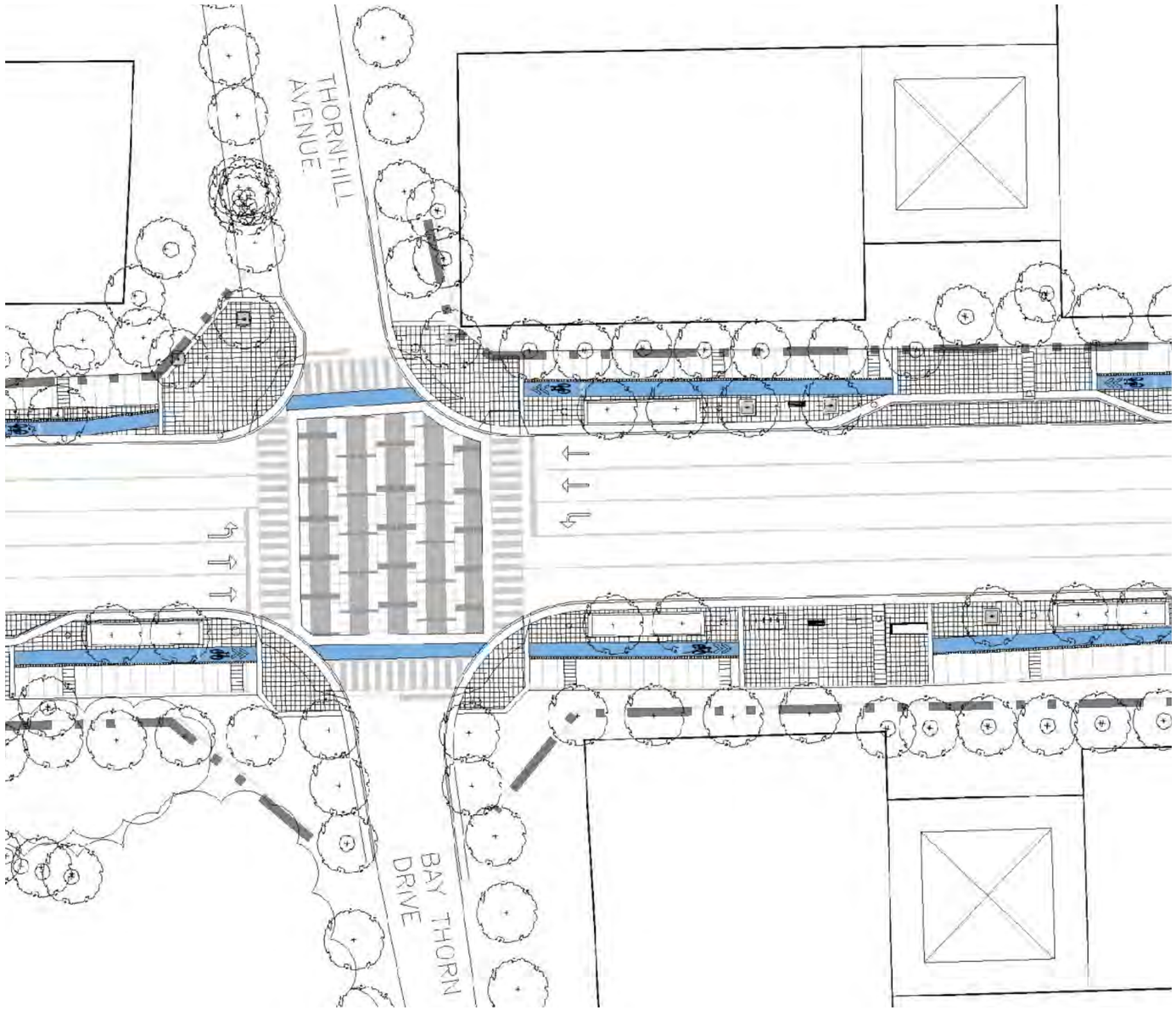
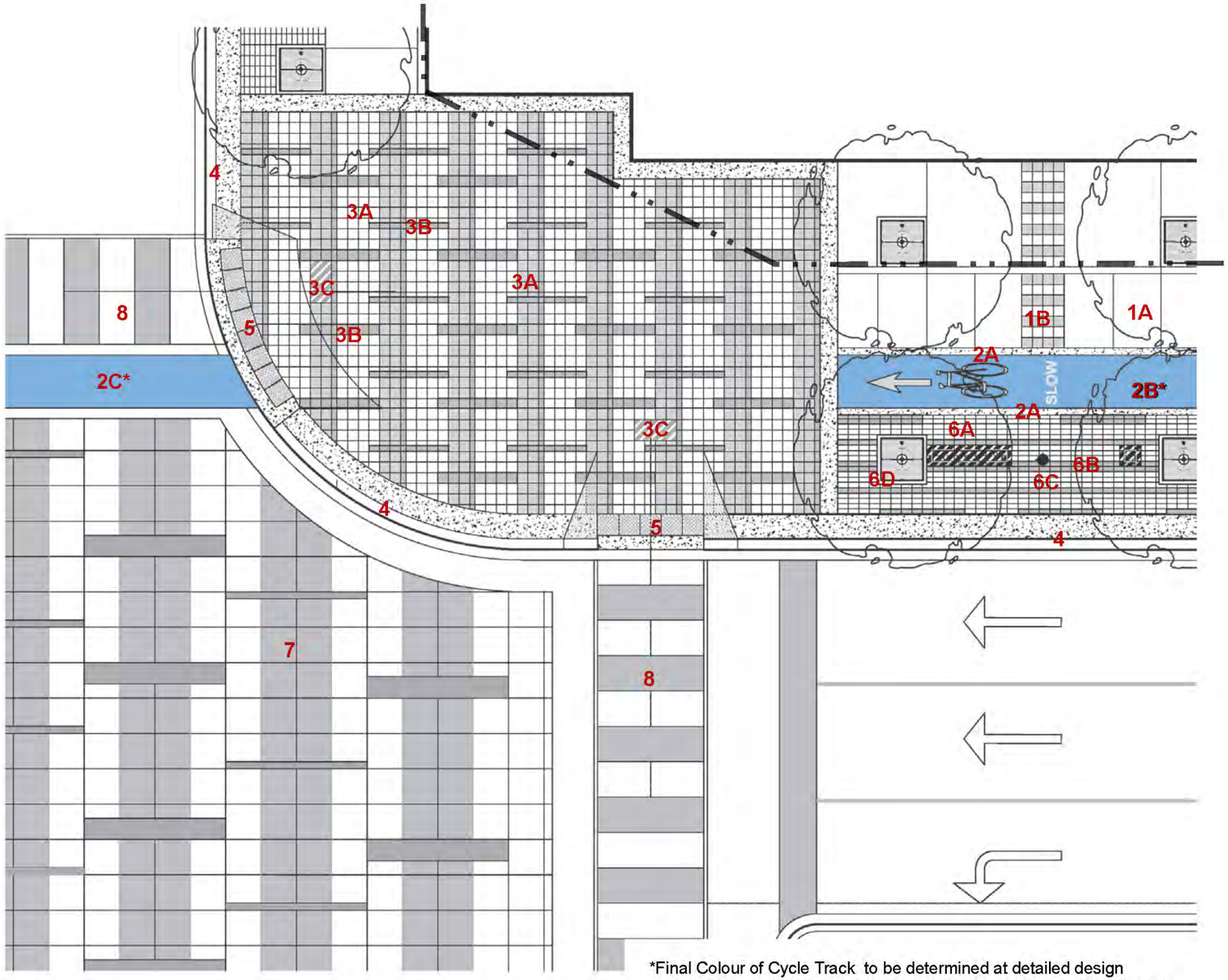


Figure 160: Intersection Detail Area Plan - New Thornhill District

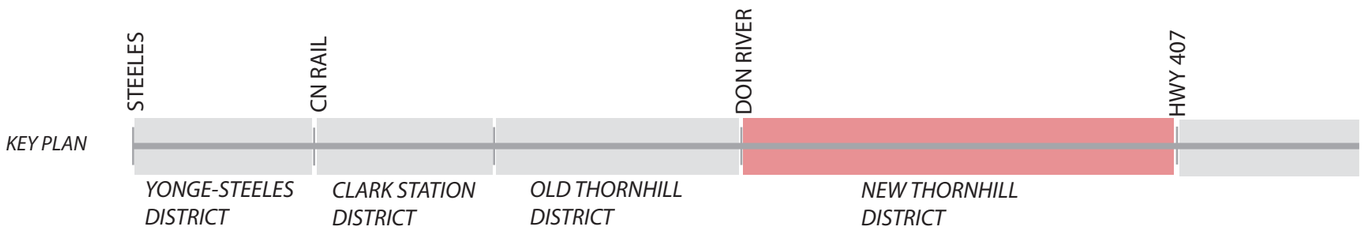
Figure 161: Typical Paving Detail
- New Thornhill District

1. Pedestrian Clearway (@2.5 to 3.0m wide)
   A. C.I.P. Concrete Walkway
   B. Precast Unit Pavers (Accent)
2. Cycle Track (@ 2.0m max. width)
   A. Textured Concrete Buffer Strip (@min. 0.2m width)
   B. Thermoplastic Cycle Track (@1.5m wide)*
   C. Unidirectional cross-rides*
3. Pedestrian Realm w/Precast Unit Pavers
   A. Precast Unit Pavers (Field Pavers)
   B. Movement" Accent Strips
   C. District ID Engraved Stone Paver
4. Continuity Strip (@ 0.5m to 1.0m wide) includes C.I.P. Concrete Continuous Strip and C.I.P. Concrete Curb
5. TWSI Edge Markings depressed curb
6. Lighting, Furniture + Planting Zone:
   A. Precast Unit Pavers (Field)
   B. Precast Unit Pavers Accent Strips
   C. Street Light /Pedestrian Lighting (16.0m max. Spacing)
   D. At-grade Tree Grate (2.0m x 2.0m)
7. Thermoplastic Intersection Treatment (i.e.TrafficPatternsXD)
8. Pedestrian Crossing



*Final Colour of Cycle Track to be determined at detailed design stage, and should be in conformance with other cycling facilities in York Region.

4. Special Character Area Customization



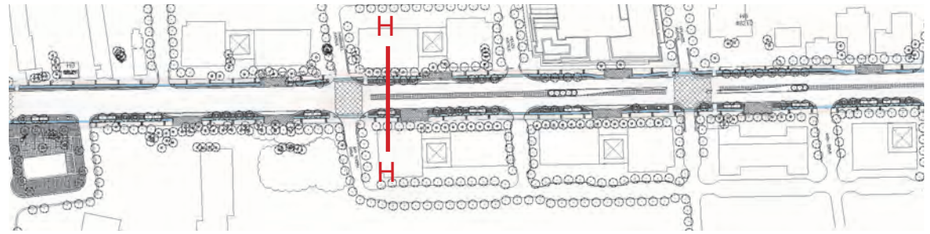


Figure 163: Key Plans

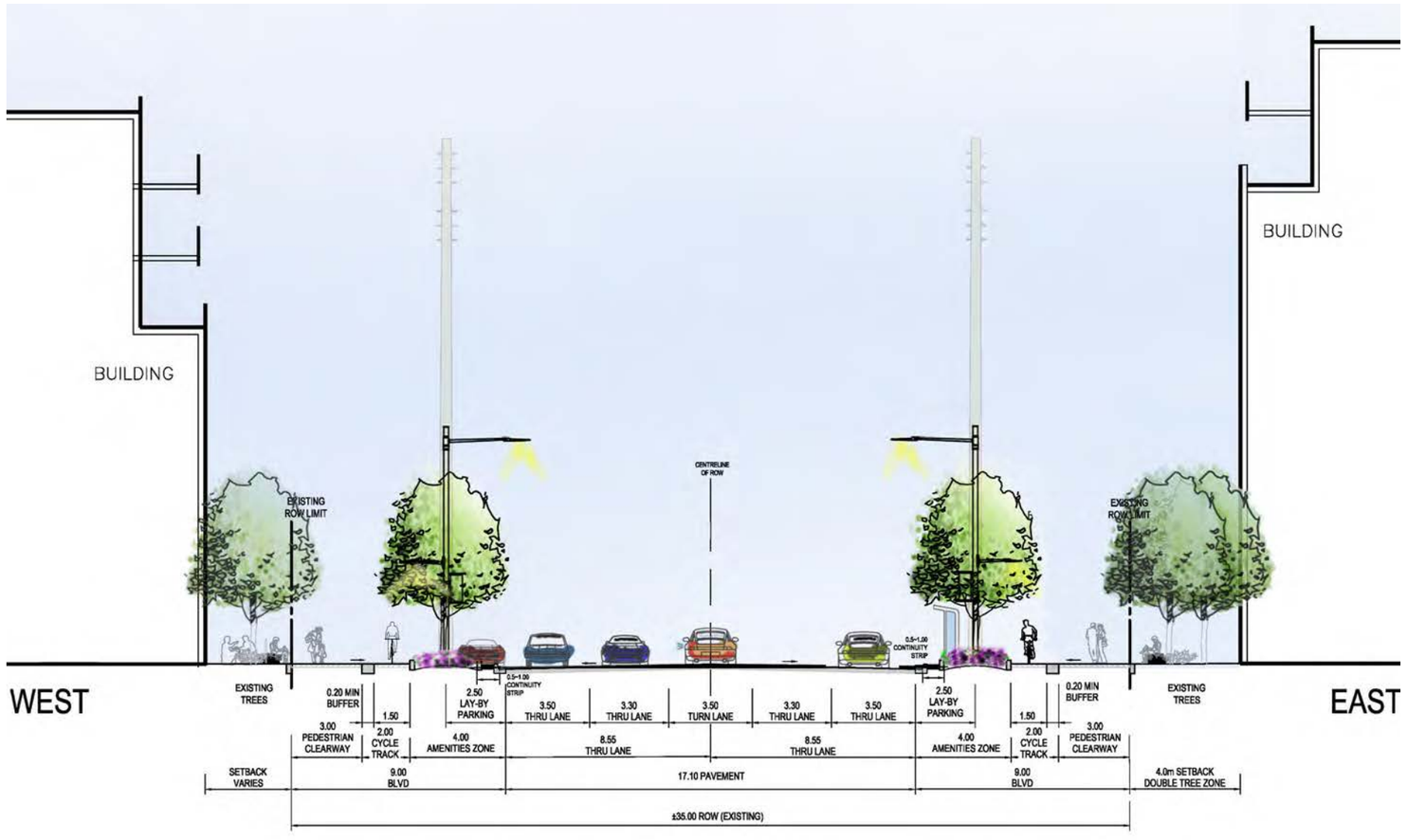


Figure 162: Concept C | Section H-H
New Thornhill

NOTE: Cycle Track protected by 2.5m lay-by parking with min. 0.7m "dooring zone" from cycling facilities and by min 0.2m buffer strip adjacent to Pedestrian Clearway

4.8 HYDRO / 407 ETR THRESHOLD

4.8.1 CHARACTER DESCRIPTION

The Hydro / 407 ETR Threshold is characterized by large infrastructure and seemingly open spaces. In this area, Yonge Street continues as a concourse under the significant Highway 407 ETR, beneath hydro transmission towers and through major green spaces. A major scale change occurs here with views into naturalized landscapes and potential public art events.

4.8.2 DESIGN GUIDELINES

Surface Treatments

- A balance of hard and soft surfaces (50%/50%).
- A continuous pedestrian surface material shall be utilized throughout the district;
- Accent surface treatments shall be used to highlight special nodes and / or edges.
- Finished surfaces of cycling facilities shall be smooth and consistent in texture such as StreetBondCL as indicated in the Detailed Design Guidelines Report;

Speciality Lighting

- Some additional lighting of the pedestrian realm and sitting areas to protect natural space areas.

Planting

- Street tree planting shall be continued near the roadway and connected with adjacent naturalized planting feature areas;
- All planting shall be consistent with York Region plant selections for native and salt tolerant species.

Parking

- On-street parking shall not be located within this area.

Furniture

- Street furniture shall be located at transit stops and social, viewing and interpretive nodes.

Boulevard Paving Materials

- Pedestrian Clearway Zone: natural concrete with saw cut and expansion joints to form reduced panel design;
- Furniture and Planting Zone: Linear unit pavers with ochre and beige as feature colours

Colour Palette

- The colour palette shall consist of neutral colours allowing the infrastructure and natural features be the focus.
- Cycling Facilities: Contrasting colour to pedestrian paving, such as “Evergreen”. could be applied to the surface of cycling;

Finishes

- Finishes to be used include natural metal, glass, concrete, unique to place.

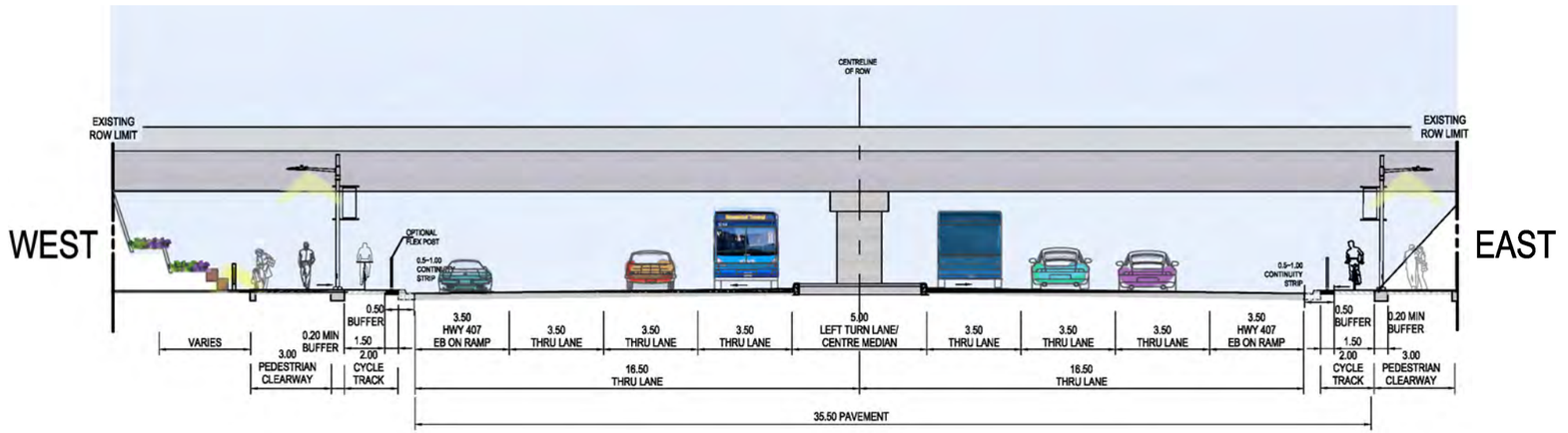
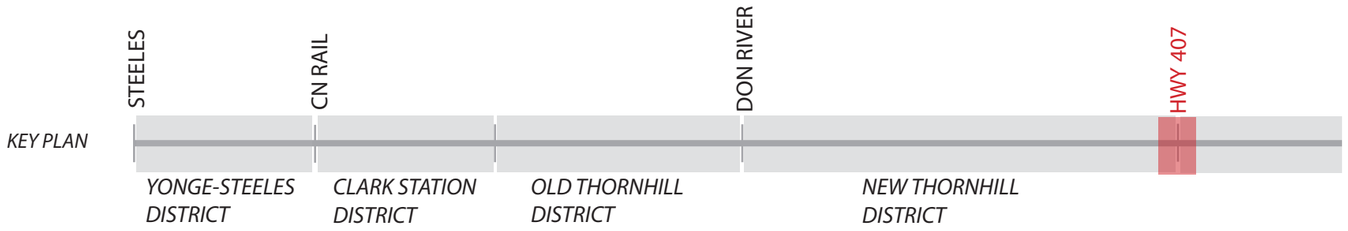


Figure 164: Concept C | Section I1-I1
407 w/Reduced Shoulder

4. Special Character Area Customization



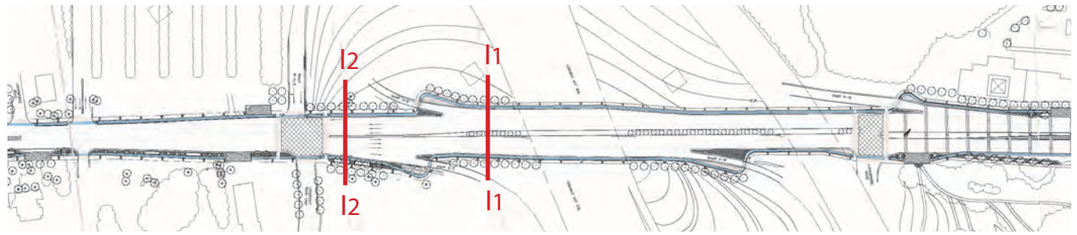


Figure 168: Key Plans

Figure 165 & 166: Specialty Lighting

Figure 167: Planting

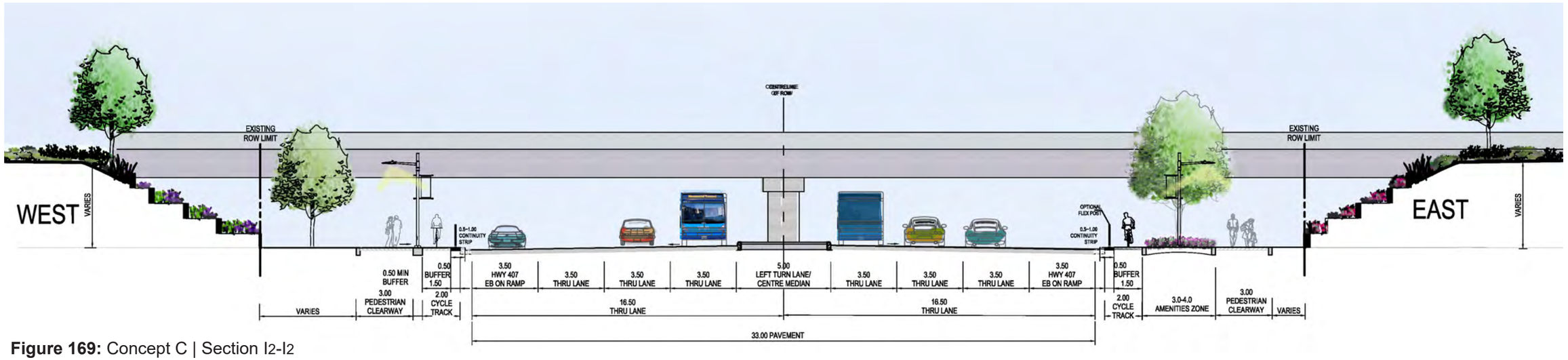


Figure 169: Concept C | Section I2-I2
Approaching 407
@ Langstaff Road East

NOTE: Flex posts are optional and to be confirmed with York Region operations/city

4.9 RICHMOND HILL CENTRE DISTRICT

4.9.1 CHARACTER DESCRIPTION

The Richmond Hill Centre District is characterized by high density, urban and building-lined street edge with vibrant grade-related retail uses in some locations. A generous pedestrian realm with strong connections to adjacent residential communities will reinforce the Richmond Hill Centre as a community hub. This district establishes a gateway experience to the Richmond Hill Centre with the Bus Rapid Transit (BRT) and related streetscape features, iconic median design and public art.

4.9.2 DESIGN GUIDELINES

Surface Treatments

- Predominantly hard paved surfaces (75-80%);
- Soft surfaces (20-25%);
- Continuous pedestrian surface material from curb to building face;
- Accent / highlights at special nodes and / or edges;
- Finished surfaces of cycling facilities shall be smooth and consistent in texture such as StreetBondCL as indicated in the Detailed Design Guidelines Report;

Speciality Lighting

- Abundant ambient light from store fronts and building foyers;
- Special feature lighting shall be used to highlight public art, street trees in plazas, linear park and median.

Planting

- Large street trees should be planted flush to grade with metal grates near intersections;
- Raised tree planters shall be used in mid-block sections;
- Supportive root zones utilizing cell and / or structural soil systems shall be utilized;
- All planting shall be consistent with York Region plant selections for native and salt tolerant species;
- Rainwater / stormwater capture systems and subgrade drainage should be used to minimize run-off and provide irrigation.

Parking

- On-street parking shall be located in lay-bys, where appropriate.

Furniture

- Street furniture shall be located at transit stops, linear park connections, plazas and other small social nodes

Boulevard Paving Materials

- Pedestrian Clearway Zone: natural concrete with saw cut and expansion joints to form reduced panel design shall be used;
- Furniture and Planting Zone: Linear unit pavers with a feature colour of charcoal shall be utilized.

Colour Palette

- A strong neutral colour scheme shall be used with charcoal accent enhancements used in banding and intermixed with linear unit stone paving pattern;
- The paving design contrasts light and medium grey stripes showcasing the Centre as a commercial and transit hub along Yonge Street and expressing a sense of modern community;
- Cycling Facilities: Contrasting colour to pedestrian paving, such as “Evergreen”. could be applied to the surface of cycling;
- Bright colours will be used on banners and displays;
- Consistent streetprint is to be used in bicycle lanes.

Finishes

- Finishes to be used include natural sand-blast concrete, natural glass, wood and metallic furniture surfaces.

Figure 170: Planting Concept

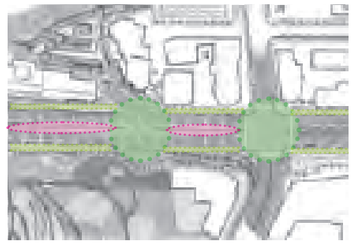
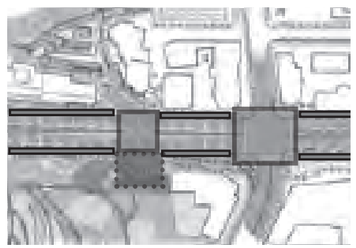


Figure 171: Paving Concept



4. Special Character Area Customization

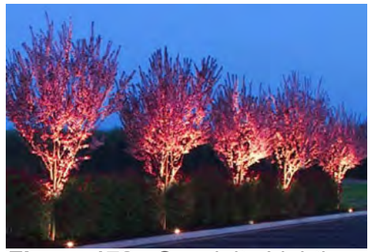


Figure 172: Specialty Lighting

Figure 173: Parking

Figure 174 & 175: Planting

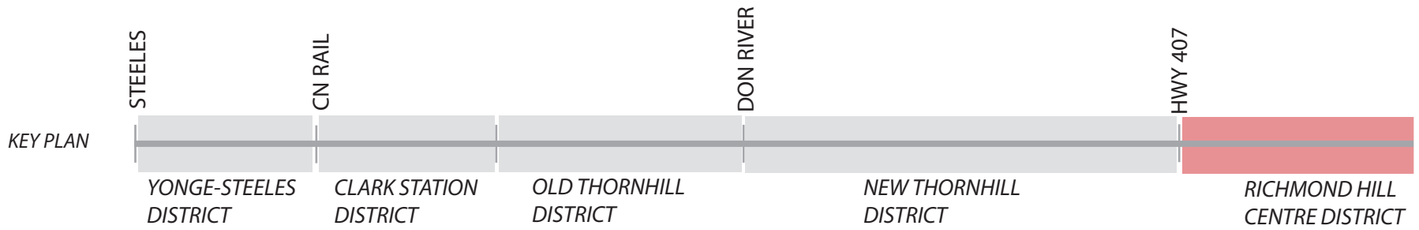


Figure 176: Key Plan

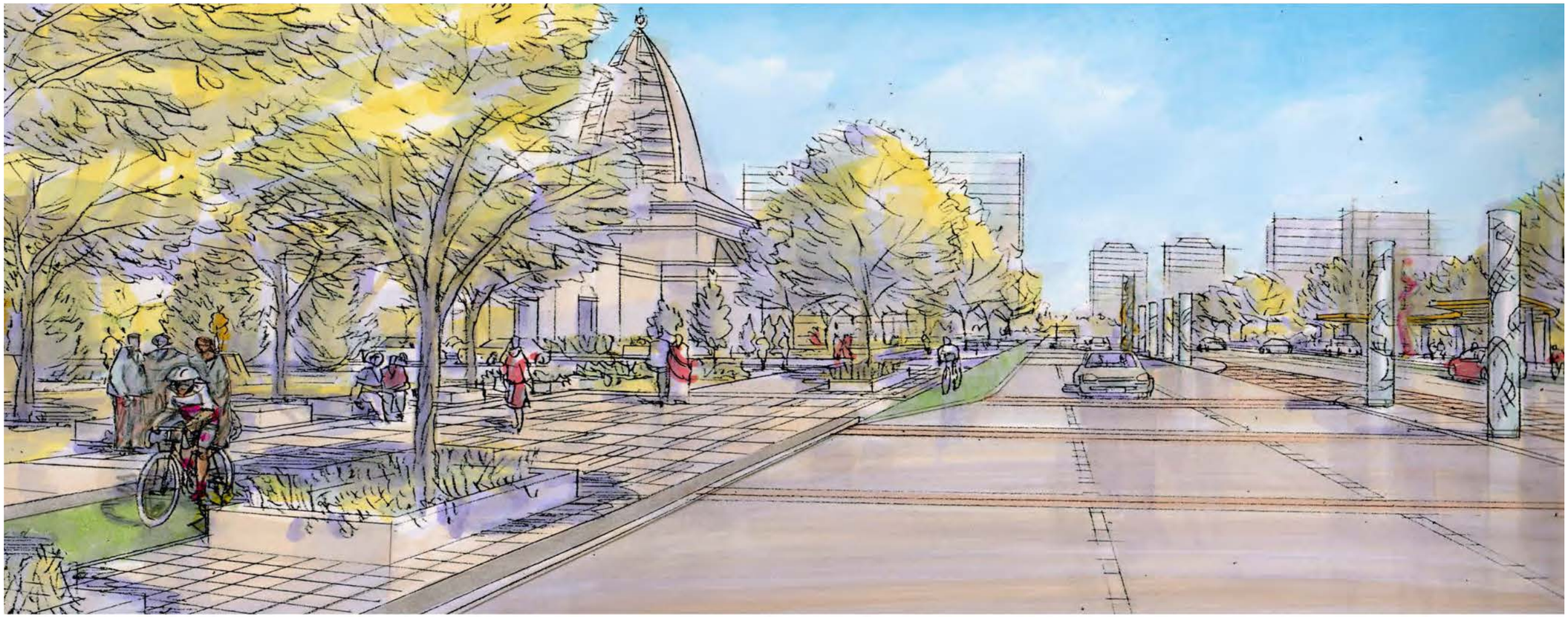


Figure 177: Perspective of Richmond Hill Centre

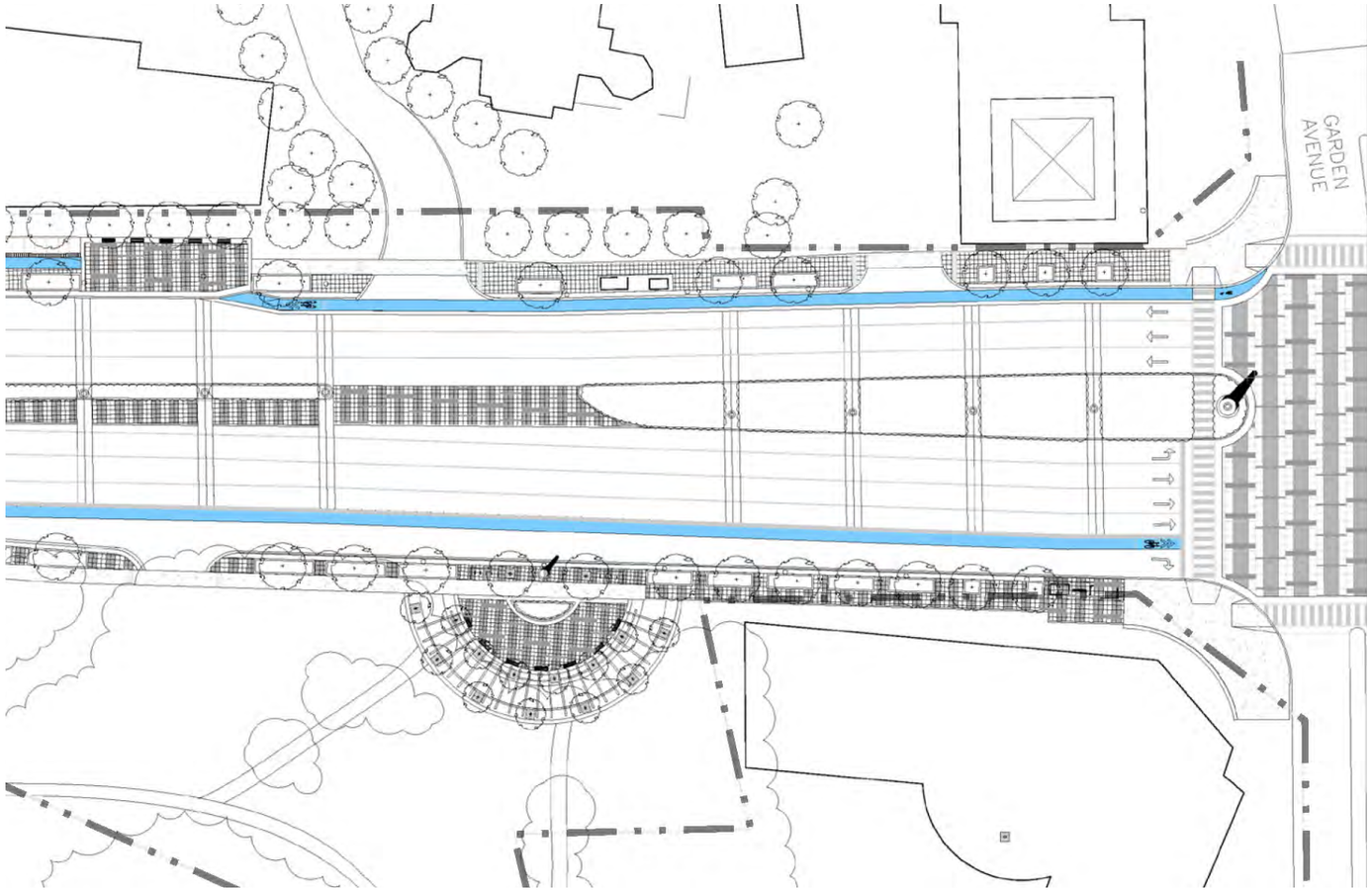


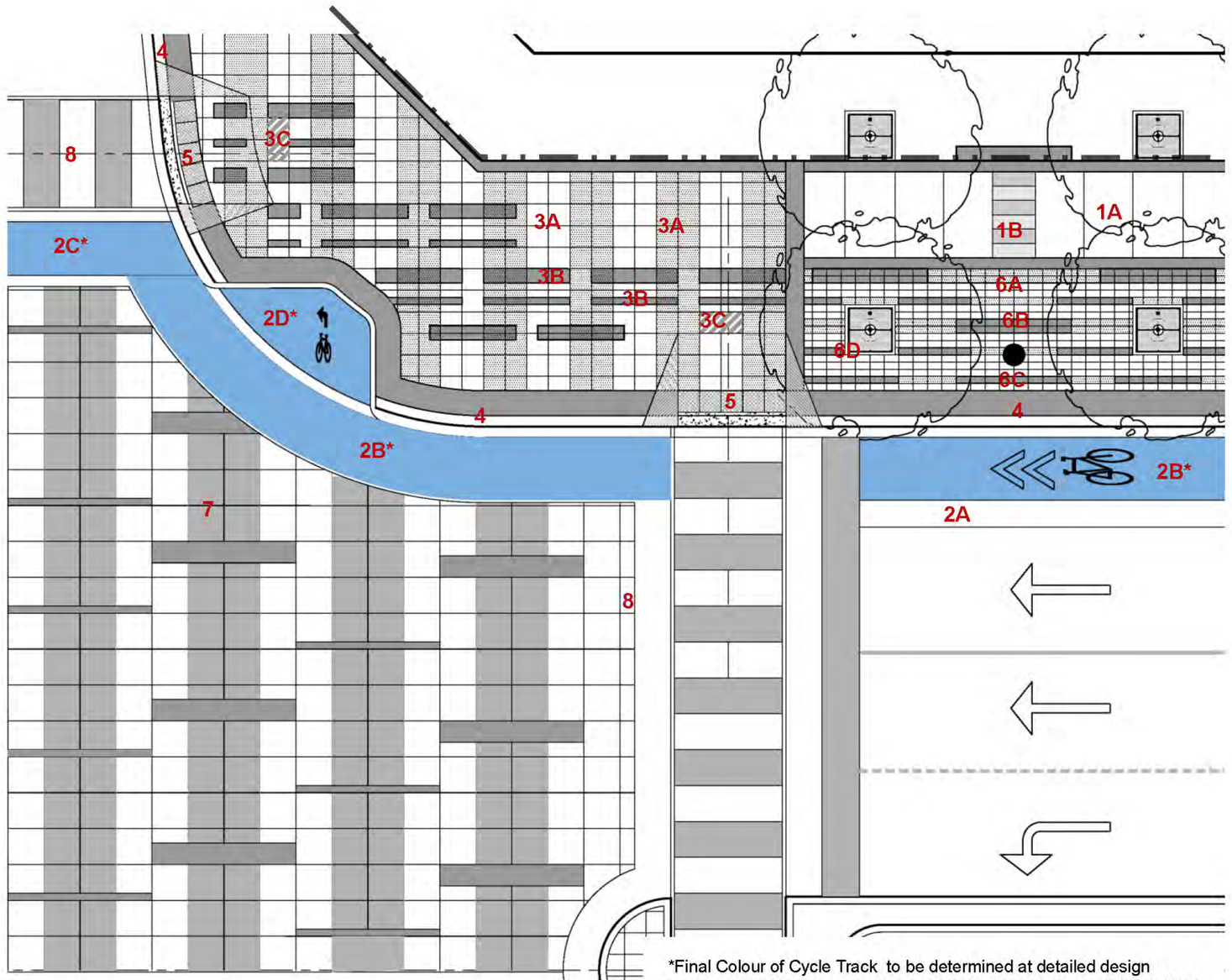
Figure 178: Detail Area Plan - Richmond Hill Centre

Figure 179 & 180: Paving Imagery

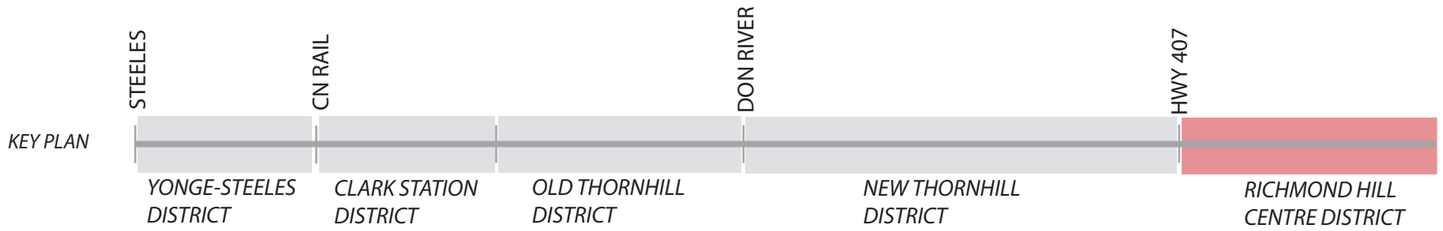
4. Special Character Area Customization

Figure 181: Typical Paving Detail
- Richmond Hill Centre

1. Pedestrian Clearway (@2.5 to 3.0m Wide)
   - A. C.I.P. Concrete Walkway
   - B. Precast Unit Pavers (Accent)
2. Cycle Track (@ 2.0m max. width)
   - A. Painted Buffer Strip (@min. 0.5m width)
   - B. Thermoplastic Cycle Track (@1.5m wide)
   - C. Unidirectional cross-rides*
   - D. Typical Bike Box (YRD-10.04)
3. Pedestrian Realm w/Precast Unit Pavers
   - A. Precast Unit Pavers (Field Pavers)
   - B. Movement" Accent Strips
   - C. District ID Engraved Stone Paver
4. Continuity Strip (@ 0.5m to 1.0m wide): includes C.I.P. Concrete Continuous Strip and C.I.P. Concrete Curb
5. TWSI Edge Markings depressed curb
6. Lighting, Furniture + Planting Zone:
   - A. Precast Unit Pavers (Field)
   - B. Precast Unit Pavers Accent Strips
   - C. Street Light /Pedestrian Lighting (16.0m max. Spacing)
   - D. At-grade Tree Grate (2.0m x 2.0m)
7. Thermoplastic Intersection Treatment (i.e.TrafficPatternsXD)
8. Pedestrian Crossing



*Final Colour of Cycle Track to be determined at detailed design stage, and should be in conformance with other cycling facilities in York Region.



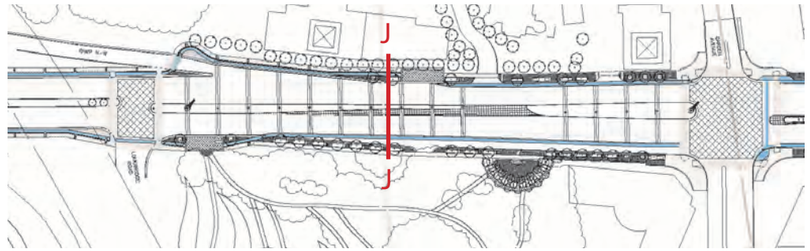


Figure 183: Key Plans

Figure 182: Concept C | Section J-J
Richmond Hill Centre District: Transition to Existing Conditions at Garden Avenue

Note: Flex posts are optional and to be confirmed by York Region/Local Municipality operations.

4. Special Character Area Customization

4.10 SUMMARY MATRIX

	DISTRICTS		
Streetscape Area	**Yonge-Steeles**	**Clark Station**	**Old Thornhill**
Character Description	• High density, urban, building-lined street edge. • Vibrant grade-related retail uses. • Generous pedestrian realm-connections to transit hub. • Gateway to York Region expressed through at-grade plaza, public art and iconic median design.	• Medium and high density, mixed use and residential buildings in green/park-like setting • Setbacks vary, with some retail at grade. • Clark Subway Station highlighted as public plaza space with opportunity for public art.	• Distinctive heritage neighbourhood identity with mixture of old and new low-rise development. • Village character relates to Don River Valley - supported through future contextual and infill development. • Key social spaces located at market and linear park.
Surface Treatment (Boulevard – curb to building face / ROW boundary)	• Predominantly hard paved surfaces (75-80%). • Soft surfaces (20-25%). • Continuous pedestrian surface material. • Accent / highlights at special nodes/edges.	• Emphasis on green surfaces (55% soft). • Paved / hard surfaces (45%). • Continuous pedestrian surface material. • Accent / highlights at special nodes/edges.	• Balance of hard and soft surfaces (50%/50%). • Continuous pedestrian surface material. • Accent / highlights at special nodes/edges.
Specialty Lighting (In addition to continuous streetlights)	• Ambient light from store fronts, building foyers. • Feature lighting of public art, street trees in plazas and median.	• Some ambient light from adjacent development. • Special place lighting of sitting areas at Clark Station.	• Some ambient light from store fronts, building foyers. • Small scale special lighting of street trees, seasonal features and market square.

Planting	• Large street trees flush to grade with metal grates near intersections.
	• Raised tree planters in mid-block sections.
	• Supportive root zones with cell / structural soil systems.
	• Consistent with York Region plant selections.
	• Rainwater / stormwater -capture systems and subgrade drainage.
	  • Automatic Dripline Irrigation System
		• Connect with adjacent landscape development.
		• Large shade street trees in double rows where possible
		• Curb planting areas filled with ground covering perennials
		• Consistent with York Region plant selections.
		• Rainwater / stormwater -capture systems and subgrade drainage.
		  • Automatic Dripline Irrigation System
			• Detailed floral and seasonal displays in conjunction with community and business initiatives.
			• Planters where possible; hanging baskets with heritage perennials, colourful annuals.
			• Consistent with York Region plant selections.
			• Rainwater / stormwater -capture systems and subgrade drainage.
			  • Automatic Dripline Irrigation System

Parking	• No on-street parking.	• No on-street parking.	• On-street parking in lay-bys.
Furniture	• At transit stops and other nodes, such as pocket parks and major gateway intersection plazas.	• At transit stops, Clark subway plaza and other small social nodes.	• At transit stops, market square and other small social nodes.

Boulevard Paving Materials	• Cycle track: smooth & seamless blue and white streetprint.
	  • Clearway Zone: natural concrete with saw cut and expansion joints to form reduced panel design
	• Furniture and Planting Zone: Linear unit pavers
	• Feature colour - charcoal.
		• Cycle track: smooth & seamless blue and white streetprint
		  • Clearway Zone: natural concrete with saw cut & expansion joints to form reduced panel design.
		• Furniture and Planting Zone: Linear unit pavers
		• Feature colour - charcoal.
			• Cycle track: smooth & seamless blue and white streetprint.
			  • Clearway Zone: natural concrete with saw cut and expansion joints to form reduced panel design
			• Furniture and Planting Zone: Linear unit pavers
			• Feature colour - brick red.

Colours	• Strong neutral colour scheme with dark charcoal accent enhancements. • Bright colours on banners and displays.	• Strong neutral colour scheme with beige accent enhancements. • Bright colours on banners and displays.	• Strong neutral colour scheme with red brick accent enhancements. • Bright colours on banners and displays.
Finishes	• Natural sand-blast concrete, natural glass, wood and metallic furniture surfaces.	• Natural metal, concrete, stone.	• Natural metal, concrete, brick, stone.

	DISTRICTS	
Streetscape Area	**New Thornhill**	**Richmond Hill Centre**
Character Description	• Newer mixed use medium density community character reinforced with future development along unified street edge. • Streetscape character connects to Don River Valley with double row of street trees along widened ROW.	• High density, urban building-lined street edge with vibrant • grade-related retail uses in some locations. • Generous pedestrian realm with strong connections to adjacent residential communities. • Gateway experience to Richmond Hill Centre and related streetscape features, iconic median design, public art.
Surface Treatment (Boulevard – curb to building face / ROW boundary)	• Balance of hard and soft surfaces (50%/50%). • Continuous pedestrian surface material. • Accent / highlights at special nodes/edges.	• Predominantly hard paved surfaces (75-80%). • Soft surfaces (20-25%). • Continuous pedestrian surface material. • Accent / highlights at special nodes/edges.
Specialty Lighting (In addition to continuous streetlights)	• Some ambient light from store fronts, building foyers. • Small scale special lighting of street trees, seasonal features and mid-block parkettes.	• Abundant ambient light from store fronts and building foyers. • Focused special lighting of public art, street trees in plazas, linear park and median.

Planting	• Detailed floral and seasonal displays.
	• Planters where possible.
	• Consistent with York Region plant selections.
	• Hanging baskets - heritage perennials and colourful annuals.
	• Rainwater / stormwater -capture systems and subgrade drainage.
	  • Automatic Dripline Irrigation System
		• Large street trees flush to grade with metal grates near
		• intersections.
		• Raised tree planters in mid-block sections.
		• Supportive root zones utilizing cell / structural soil systems.
		• Consistent with York Region plant selections.
		• Rainwater / stormwater - capture systems and subgrade drainage
		  • Automatic Dripline Irrigation System

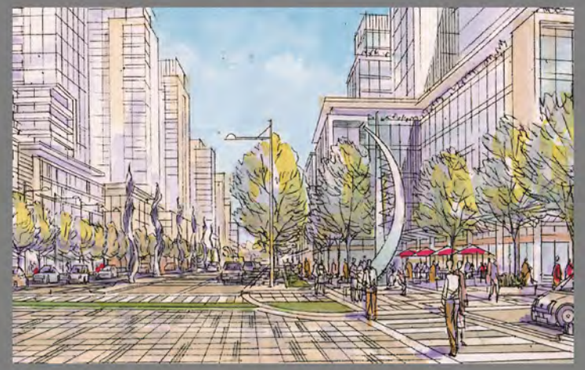
Parking	• On-street parking in lay-bys.	• On-street parking in lay-bys.
Furniture	• At transit stops and other small social nodes	• At transit stops, linear park connections, plazas and other small social nodes.

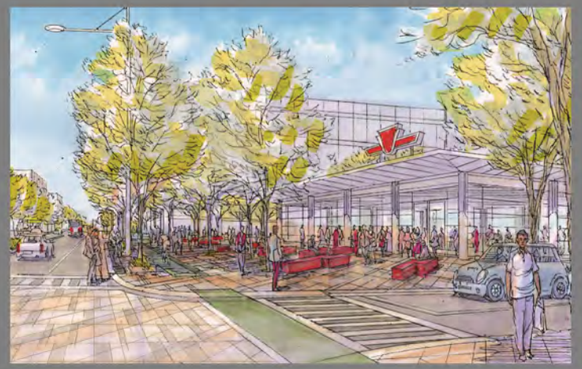
Boulevard Paving Materials	• Cycle track: smooth & seamless blue and white streetprint.
	  • Clearway Zone: natural concrete with saw cut and expansion joints to form reduced panel design
	• Furniture and Planting Zone: Linear unit pavers
	• Feature colour - brick red.
		• Cycle track: smooth & seamless blue and white streetprint
		  • Clearway Zone: natural concrete with saw cut & expansion joints to form reduced panel design.
		• Furniture and Planting Zone: Linear unit pavers
		• Feature colour - charcoal.

Colours	• Strong neutral colour scheme with red brick accent enhancements. • Bright colours on banners and displays. • Bike lanes - blue and white streetprint.	• Strong neutral colour scheme with dark charcoal accent enhancements. • Bright colours on banners and displays.
Finishes	• Natural metal, concrete, brick, stone.	• Natural sand-blast concrete, natural glass, wood and metallic furniture surfaces.

4. Special Character Area Customization

	THRESHOLDS		
Streetscape Area	**CN Rail**	**Don Bridge**	**407/Hydro Corridor**
Character Description	• Multi-use public space on decked surface contiguous with streetscape, over CN Rail track. • Located near highest point of Yonge Street with excellent views north. • Passive and active recreational space with generous pedestrian realm and public art opportunity.	• Widened streetscape pedestrian deck over subway as it spans • Don River. • Opportunities for public art, viewing of valley, interpretive signage, small gatherings and events. • Opportunities for innovative & iconic bridge design	• Yonge Street continues as concourse under significant Highway 407, beneath Hydro transmission towers and through major green spaces. • Major scale change with views into naturalized landscapes and potential public art events. • Opportunities for public art
Surface Treatment (Boulevard – curb to building face / ROW boundary)	• 60% hard / 40% soft surface	• 60% hard / 40% soft surface	• 50% hard / 50% soft surface.
Specialty Lighting (In addition to continuous streetlights)	• Special place lighting of vegetation, sitting and activity areas	• Limited additional lighting of surface and sitting areas to protect natural valley area.	• Some additional lighting of pedestrian realm and sitting areas to protect natural space areas.
Planting	• Green roof deck planters with rainwater capture system connected to rail cut. • Consistent with York Region plant selections	• Green roof deck planters with rainwater capture systems connected with Don River valley Stormwater Management ponds. • Consistent with York Region plant selections.	• Continue street tree planting near roadway and connect with adjacent naturalized planting feature areas. • Consistent with York Region plant selections.
Parking	• No on-street parking.	• No on-street parking.	• No on-street parking.
Furniture	• Located within the decked over space	• Located on deck to address views and interpretive features.	• At transit stops, social, viewing and interpretive nodes.
Boulevard Paving Materials	• Cycle track: smooth & seamless blue and white streetprint • Field: natural concrete with unit paver highlights at edges. • Unit paver feature colour – charcoal and brick red.	• Cycle track: smooth & seamless blue and white streetprint • Field: natural concrete with unit paver highlights at edges. • Unit paver feature colour – blue • Panels of walkable glass block surfacing.	• Cycle track: smooth & seamless blue and white streetprint • Pedestrian Clearway Zone: natural concrete with saw cut and expansion joints to form reduced panel design. • Unit paver feature colour – ochre and beige.
Colours	• Neutral colours – let infrastructure / natural features be the focus.	• Neutral colours – let infrastructure / natural features be the focus.	• Neutral colours – let infrastructure / natural features be the focus.
Finishes	• Natural metal, glass, concrete, unique to place.	• Natural metal, glass, concrete, unique to place.	• Natural metal, glass, concrete, unique to place.





5

UTILITIES AND SERVICES

5. Utilities and Services

5.1 CONCEPTUAL APPROACH

Public utilities such as natural gas, electricity, telephone, cable, water and sewer, as well as transit related services, are located within the street right-of-way. The proposed future development along the South Yonge Street corridor will require additional capacity of these services. Utility congestion, both above and below ground is a major problem and poses a challenge to tree planting and the quality of the pedestrian clearway zone.

The Streetscape Master Plan envisions a much more urban approach to streetscape design requiring greater emphasis on a higher quality pedestrian and social environment as well as places for cyclists, on-street parking and transit. These increasing demands for space within the right-of-way also place additional coordination requirements on utilities and municipal services.

The Streetscape Master Plan for South Yonge Street also requires that the planning, design, construction and operation of the utilities and services address environmental sustainability considerations to the maximum extent possible.

The strategy for utilities and services addresses both the overhead and below grade spaces as part of the overall Streetscape Master Plan for South Yonge Street.

5.2 ORGANIZATION AND COORDINATION

The planning, design and detailed coordination of utilities and service installations, operation and maintenance requires a consistent and integrated approach that reflects and supports the Streetscape Master Plan for South Yonge Street. This is especially important to assist in the achievement of the streetscape design intent as well as in the management of on-going efforts to reduce the frequency and impact of right-of way construction related to utilities and services.

It is recommended that a utility coordination effort be formalized to address these considerations by means of a Public Utilities Coordinating Committee (PUCC). This Committee will establish principles for the locations of utilities along Yonge Street and future streetscape projects. Each utility shall be assigned an “ideal” location horizontally, and a specific depth below the surface. These utilities shall be mapped and made available by the PUCC. Typically shallow utilities are located under or near the pedestrian clearway zones and deeper utilities are located under the roadway.

New types of utilities, in particular telecommunication wires, compete for limited space under the pedestrian clearway zone. This results in trees being difficult to locate within this dense network of utilities, however, they are a significant element of the streetscape and therefore should be considered to have an equal, if not higher, status than other public utilities.

Since disruption to pedestrian surfaces due to emergency and demand-driven utility work is often frequently encountered, many of the design guidelines enable and facilitate easy access and repair for utilities. Each of the utilities that require occasional maintenance is usually completed by means of cut repairs if the problem cannot be fixed at an access hole or vault. With dry-laid construction, unit pavers can be removed, excavation and repairs completed, while the original pavers can be re-laid on a new base. This solution does not compromise the functional or aesthetic appearance of the initial streetscape intent.

5.3 EXISTING UTILITIES, SERVICES AND LIDs

The Yonge Street Corridor contains an extensive network of utilities both above and below grade. Utility poles and light standards are continuous throughout the span of this study, while gas, communications and municipal services (storm sewers, sanitary sewers and watermains) exist below grade within the boulevards

and pavement. These are all depicted in cross sections AA to HH in Appendix 2: Utilities Locations. All of this infrastructure must be considered in the implementation of the master plan to produce a pleasing streetscape appearance while being mindful of the cost to relocate existing infrastructure. In addition to this goal, we are proposing the use of LID measures to develop an engineering design that manages stormwater runoff in a green and sustainable manner.

5.4 ABOVE GRADE SERVICES

5.4.1 OVERHEAD UTILITIES AND HYDRO POLES

Throughout the entire span of this study, overhead utilities and hydro poles exist on both sides of Yonge Street. Although it is preferable from an aesthetic perspective that all utilities be buried, it may be cost prohibitive to do so. Similar projects in York Region have resulted in existing overhead utilities remaining overhead due to cost implications to bury them. However, the costs can be reviewed in more depth through the detailed design process when federal infrastructural funding may provide opportunities for its implementation. In planning proactively, our proposed cross sections, as indicated in Appendix 2, will accommodate alternate utility trench locations where possible to maintain flexibility in the event that converting to below ground utilities is feasible.

The existing utility poles and light standards often conflict with cycling facilities or pedestrian clearway. They will be relocated and aligned with the street trees and light standards and the same offset.

5.4.2 TRANSFORMERS AND UTILITY PEDESTALS

In cases where existing transformers and pedestals will require relocation to accommodate the new cross section, they will be relocated and aligned with the street trees and light standards and the same offset.

5.5 BELOW GRADE SERVICES

5.5.1 WATERMAIN

The existing watermain along Yonge Street is typically located within the boulevard and will in some cases conflict with the proposed street tree and hydro pole/light standard offset within the cross section. Each case will vary as watermain relocations are anticipated and the extent of which will be better assessed during the detailed engineering design stage.

New development along Yonge Street will increase demand and capacity requirements of the existing watermain. To accommodate growth, watermains along the corridor may require upsizing which provides an opportunity to revise its horizontal alignment to be more compatible with the new cross section.

5.5.2 SANITARY SEWER

The existing sanitary sewer along Yonge Street is located within the roadway and is frequently within the boulevard as well. In cases where the sanitary sewer is located within the roadway, no conflicts are expected. However, consideration must be given for sanitary sewers within the boulevard.

Although sanitary sewers within the roadway do not present any conflicts with the proposed cross section, the growth and new development along Yonge Street will increase demand on the sewers requiring that they be upsized. The existing system's capacity should be further reviewed during detailed engineering design stage to account for future growth. Any requirements to increase the sewer size should be considered during implementation of the master plan to avoid future disturbance of Yonge Street. Similar to the watermain, sanitary sewers within the boulevard may conflict with the street tree and hydro pole/light standard offset and therefore require relocation.

5.5.3 STORM SEWER

The existing storm sewer is located beneath the curb with catchbasin manholes located within the gutters. Our proposal to widen the boulevard will require that new catchbasins be installed at the new gutter location however, the storm sewer alignment will remain unchanged, solely that the lids of the catchbasin manholes will be converted to simply manholes within the boulevard. This will greatly minimize cost, duration of construction and overall disturbance to the community.

With the implementation of the Low Impact Development (LID) measures proposed within this report, the runoff directed to the storm sewers is expected to be reduced such that the existing sewers can remain and do not require replacement.

5.5.4 GAS

Existing gasmains are typical within both the east and west boulevard of Yonge Street and their offsets are quite variable. In some cases, the gasmain is compatible with the new cross section and lies within the cycle path or pedestrian clearway. However, some relocations may be required to maintain adequate cover and clearance to other infrastructure. In the event that tree planter LIDs are included as part of the LID system, there may be an opportunity to locate some utilities within the same offset as the tree pits which will be an efficient use of space. Furthermore, future access to utilities is possible without excessive disruption with the use of tree planters.

5.5.5 COMMUNICATIONS

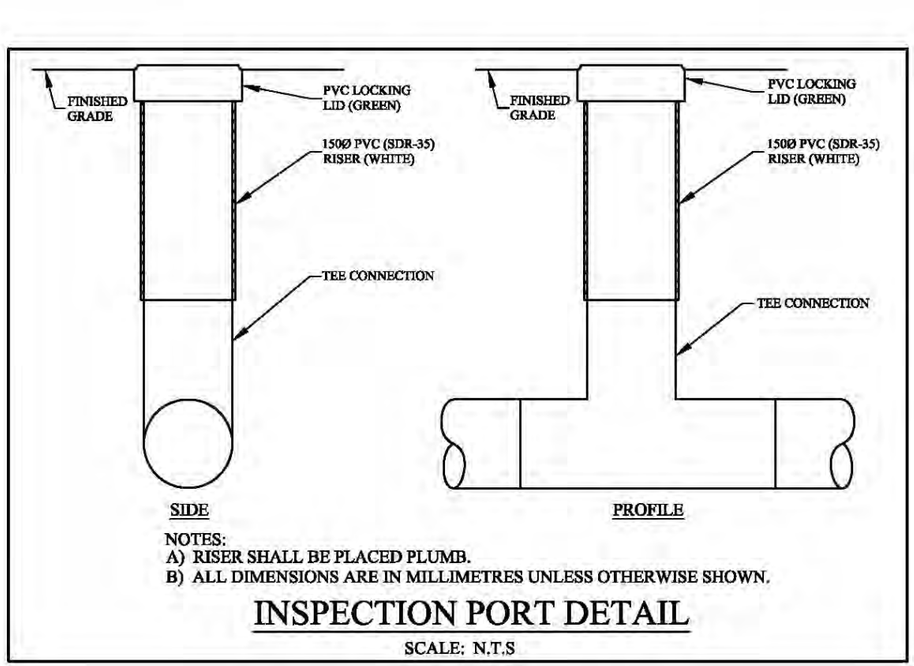
Various communications infrastructure exists along the Yonge Street Corridor. In cases where their current locations are compatible with the proposed cross section, they can remain in place. However, in the case of conflict, two options for the location of buried utilities are proposed. Utilities can be placed within the cycle track or pedestrian clearway where future access would require reinstatement of the cycle track. A second alternative is to locate utilities within tree planters which contain a series of rigid frames that support hard surfaces while keeping the underlying soil loose to promote tree growth. This system also allows the installation of utilities or even irrigation systems where future access is simple and cost effective.

5.6 LOW-IMPACT DEVELOPMENT (LID)

The Streetscape Master Plan concept for Yonge Street provides an opportunity to implement an engineering design that manages stormwater runoff in a green and sustainable manner. Of the numerous LIDs measures available, the followings are selected which we believe to be appropriate for this application. These include Catchbasin Exfiltration Trenches within the Boulevard, Tree planters also within the boulevard, and Porous Asphalt to be used for the cycle track. However, long term durability of porous asphalt may be a consideration.

5.6.1 CATCHBASIN EXFILTRATION TRENCHES

As shown on Figure A, the proposed catchbasin exfiltration trenches will collect runoff from lots and road and boulevards via the street catchbasins. The catchbasin adjacent to the proposed trench is proposed to be outfitted with a Point of Entry Trap (POET) as a pre-treatment measure in addition to the catchbasin sump. Flows will be conveyed to the proposed trench to facilitate infiltration via a 150 mm diameter PVC lead which connects to a 150 mm diameter PVC perforated subdrain which runs the length of the proposed trench. During storm events where runoff directed to the proposed trenches exceeds the capacity of the trenches, the adjacent catchbasin is designed to then convey runoff into the proposed storm sewer via the proposed catchbasin lead.



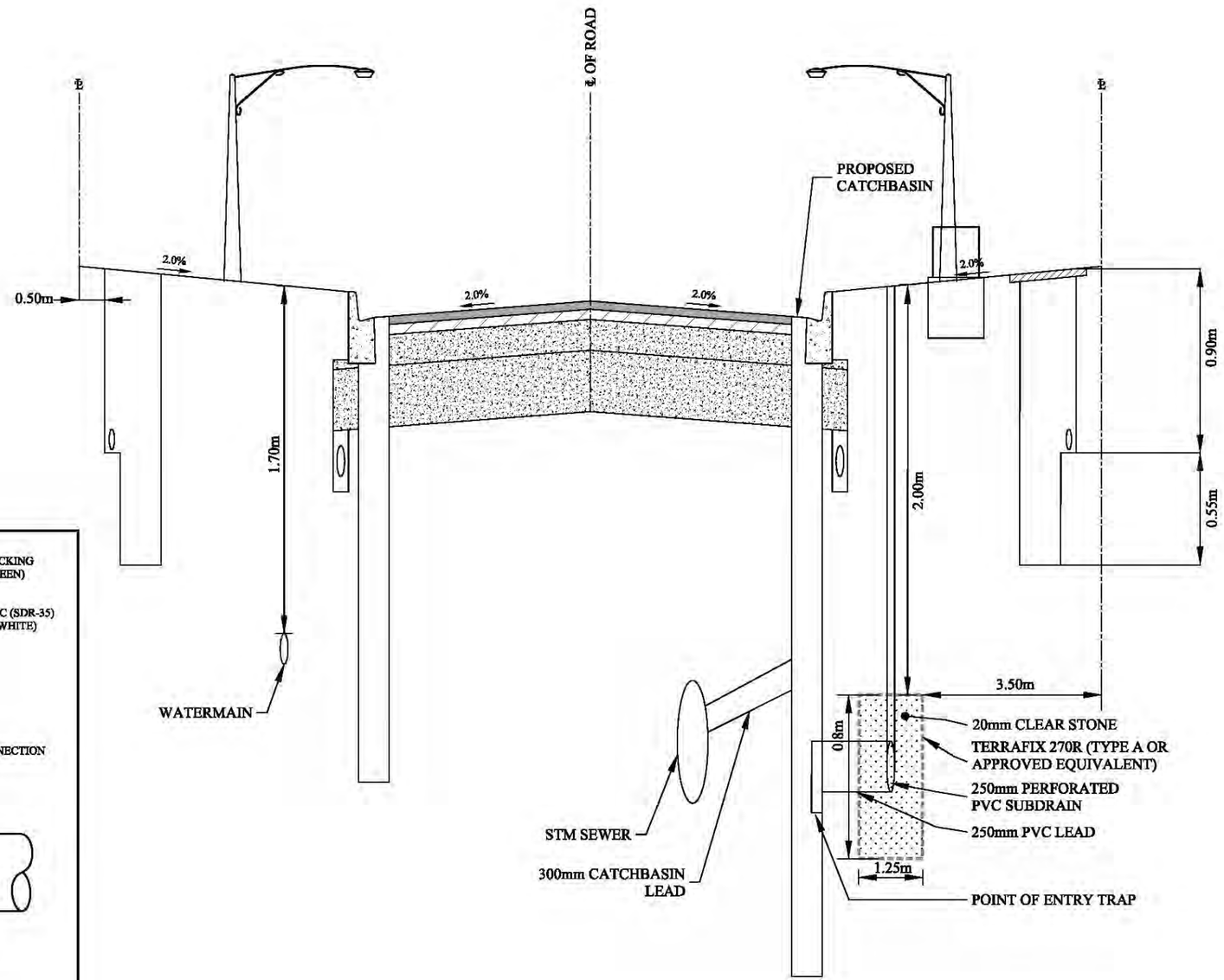


Figure 184: CatchBasin Exfiltration Trench Detail (Typical) by SCS Consulting Group Ltd.

5.6.2 TREE PLANTERS LID WITHIN BOULEVARD

Tree planters based LIDs consist of a bioretention system below the standard street trees in the boulevard. The bioretention system has a number of benefits including quality control via infiltration and/or filtration, promotes healthy root growth for street trees and therefore also adds to the aesthetic of the ROW. Runoff enters the system via the street catchbasins which provide pre-treatment via the catchbasin sump. If placed in an area where infiltration is possible, an overflow system is included to ensure the trees to do not become oversaturated. Where groundwater levels do not permit infiltration, a bottom draw would convey filtered water to the storm sewer system. A preliminary detail a tree pit LID layout ROW is shown on Figure 185.

Automatic Irrigation System

Irrigation controllers and pedestals can easily be incorporated into the cross section through the detailed design process. We envision the irrigation pedestal structure to be located at the same offset as other utilities such as transformers, Bell and Rogers pedestals, light standards and hydro poles.

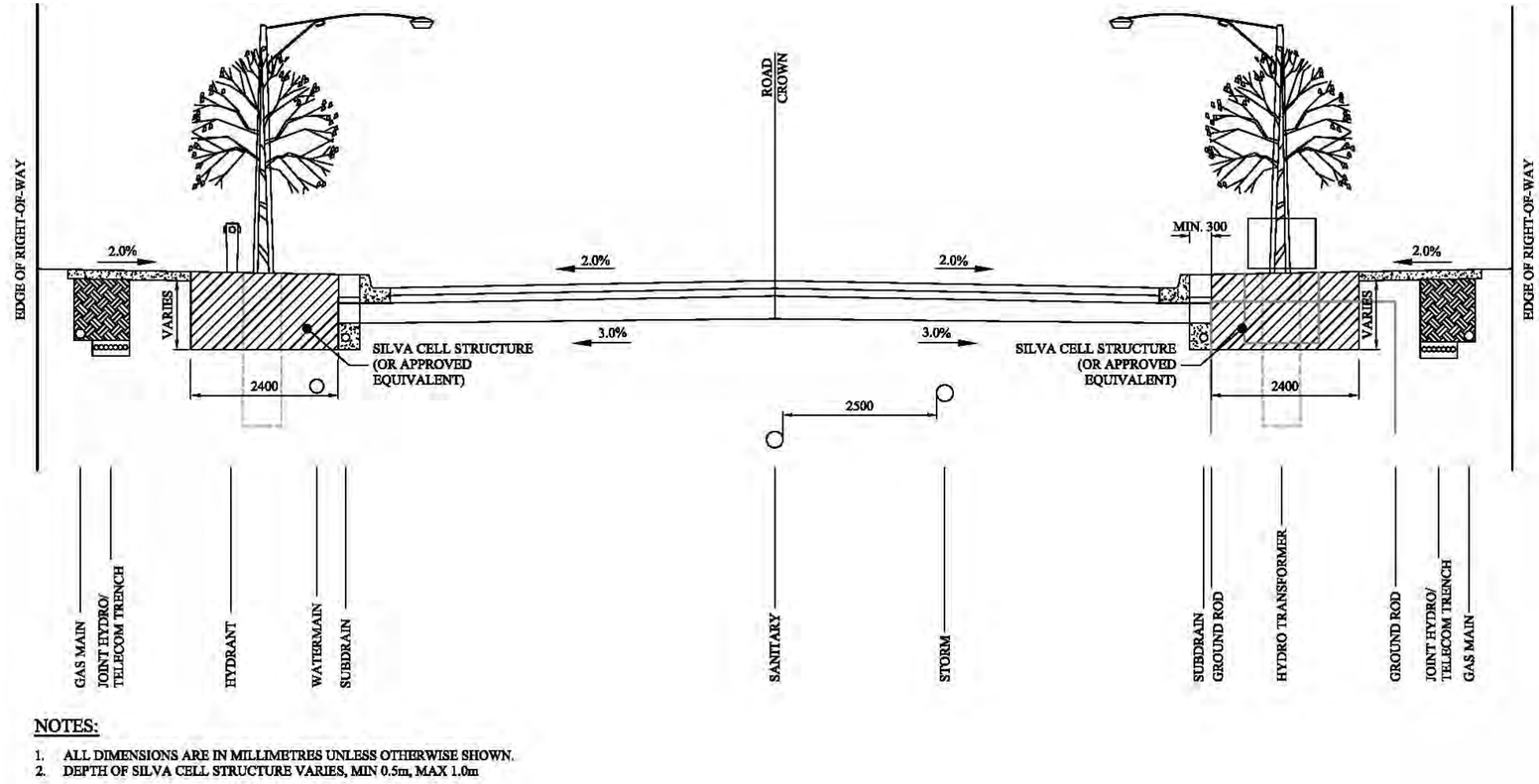


Figure 185: Preliminary Tree Pit LID Layout Designed by SCS Consulting Group Ltd.

5.6.3 POROUS ASPHALT

Porous Asphalt is a SWM system that allows water to penetrate the surface and drain to the subbase which acts as a reservoir. Typical hot mix asphalt does not allow water to penetrate the surface, forcing water to sheet flow until it reaches the inlet, raising the volume of runoff, and its temperature. The high void structured asphalt pavement allows stormwater to pass through it and stores water in the reservoir promoting infiltration until saturated, after which runoff will spill to the outlet (see Figure C). Porous Asphalt acts as a SWM facility in an environmentally effective way. It provides storage, upholds infiltration, improves water quality, replenishes aquifers, reduce overall runoff and protects streams.

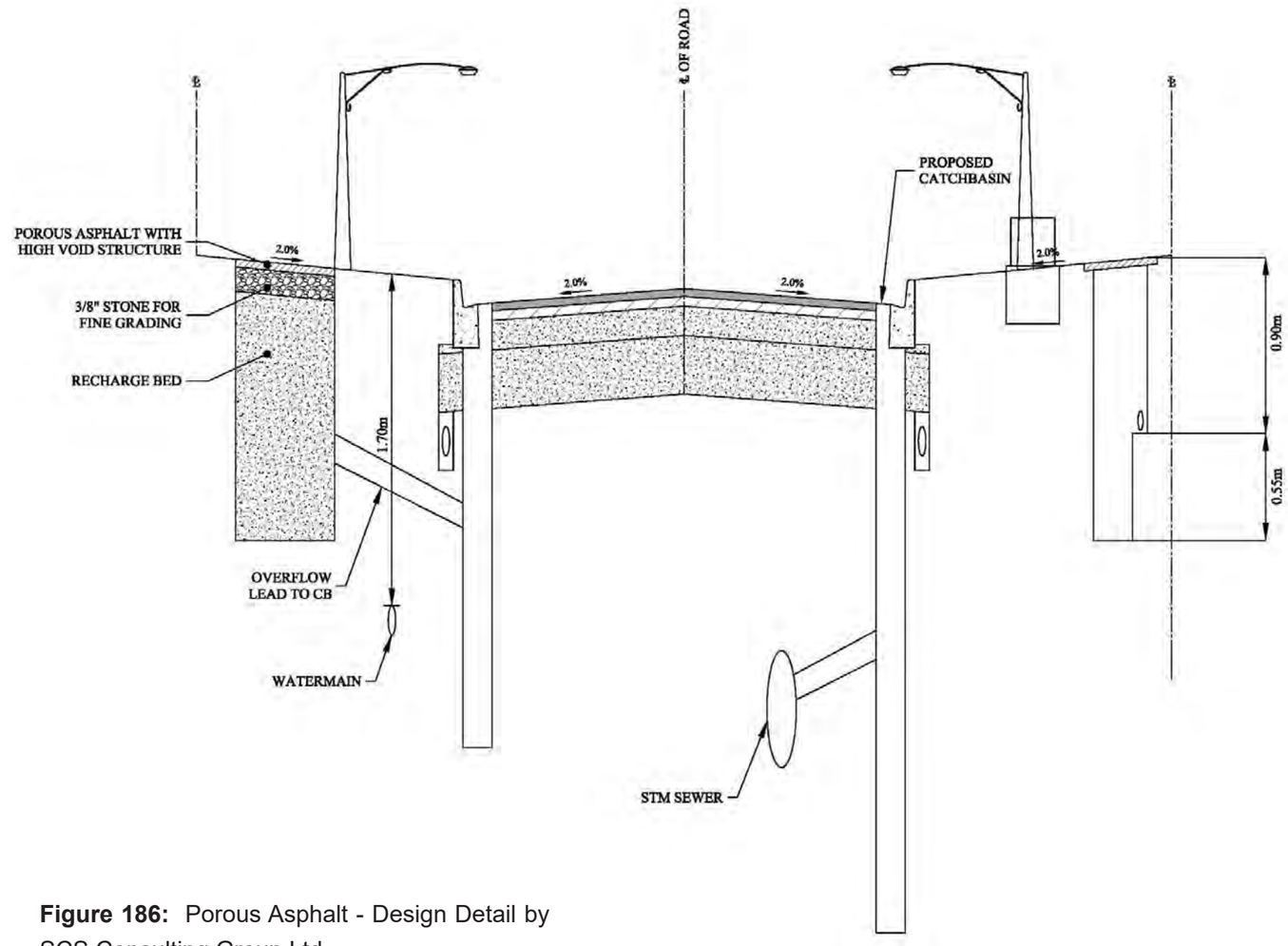
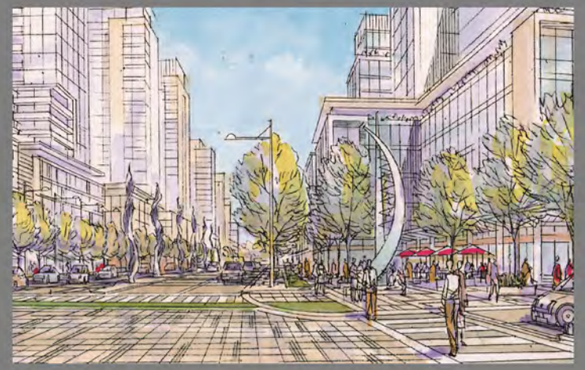
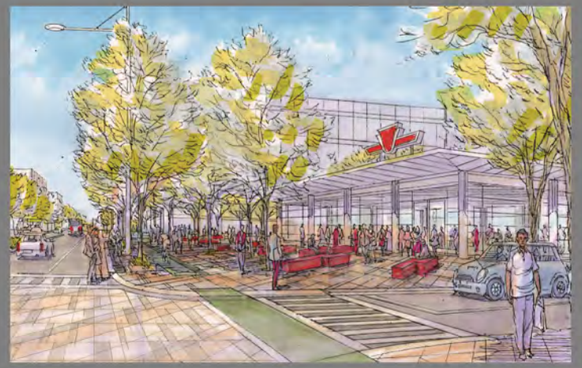


Figure 186: Porous Asphalt - Design Detail by SCS Consulting Group Ltd.





6

SUSTAINABILITY CONSIDERATIONS

6.1 PHILOSOPHY AND APPROACH

The sustainable design philosophy for the South Yonge Street Corridor Streetscape Master Plan is rooted from the principles of Low Impact Development (LID) which encompasses the natural and physical environment, the social environment and the economic environment. Green infrastructure offers a number of benefits including mitigation of urban heat island effects, reduction of energy demands, reduction of stormwater flows, protection from flooding, sequestration of carbon, filtration of air and water pollutants as well as a range of aesthetic improvements, social, community and economic benefits.

Associated benefits of incorporating sustainable design elements into the streetscape design include but are not limited to improved air quality, reduction of the urban heat island effect and enhanced human health and comfort, particularly within the streetscape.

Yonge Street will become a vibrant “Main Street” for York Region and a place for people to live, work and socialize. Encouraging development that is environmentally sustainable is an important element to achieve the overall vision. There are a number of performance measures that can be utilized by York Region to ensure that any future development along Yonge Street adheres to the overall objective of sustainability.

Figure 187, 188 & 189: Examples of Low-Impact Development Practices

6.2 LOW IMPACT DEVELOPMENT (LID)

For over a decade now, the management of urban stormwater runoff in Ontario has been undergoing a significant shift towards decentralized practices that help maintain and restore the natural water balance. These practices, known as Low Impact Development (LID), mimic the natural water balance by focusing on promoting increased evapotranspiration, infiltration and groundwater recharge, and lower surface runoff volumes and flow rates. Maintaining the natural or pre-development hydrology of a site is critical to the ecological functioning of natural features, such as wetlands, woodlands, and watercourses. Hence, an LID approach to stormwater management includes consideration of water balance criteria for the protection of natural features. Some of these LID measures have been described In details in Section 5 Utilities and Services.

LID practices are those applied to minimize runoff at source, where rain falls. Examples include increased pervious cover, disconnection of impervious areas from the storm sewer system, cisterns for collection of roof runoff, grassed swales, green roofs, rain gardens and bioretention areas. Existing stormwater management models have been adapted to incorporate more of these practices in order to promote widespread adoption of the water balance approach by landscape architects, engineers, planners and other practitioners in the development industry.

The following LID practices have been adopted in a wide range of new development projects worldwide:

- Bioretention and Rain Gardens;
- Green Roofs;
- Blue Roofs;
- Soakaways, Infiltration Trenches and Chambers;
- Permeable Pavement;
- Swales and Roadside Ditches.

As described in Section 5: Utilities and Services, some of these practices may be applicable to the design and implementation of Streetscapes Development along Yonge Street as proposed by this SYMP Update. With our winter climatic conditions, usage of salt by Municipalities could be a concerning factor. This practice should not have an adverse impact on the ability of the LID to function as designed as there are mitigating measures that can be applied to reduce the impact of salt usage on groundwater. The catachbasin proposed in Figure 184 can be equipped with a CB Shield. This along with regular maintenance of the catchbasin will reduce the migration of sodium and chloride to groundwater. There is also the possibility of the catchbasin structure to be equipped with an oil-grit separator. With respect to the tree planter LID shown in Figure 185, the tree planter will only receive runoff from the boulevard and not the road therefore, the extent of de-icing salts present in the runoff directed to the planter will be minimal. Furthermore, there is the possibility of runoff treatment by the tree roots and vegetation within the planter. As for Figure 186 proposing the porous asphalt, this is similar to the tree planter noted above where the runoff will have a minimal amount of de-icing salts present since the source of runoff will be the boulevard, not the road.

6.3 SUSTAINABLE SITES INITIATIVE (SITES)

The Sustainable sites Initiative™ (SITES™) is a programme based on the understanding that land is a crucial component of the built environment and can be planned, designed, developed, and maintained to avoid, mitigate, and even reverse these detrimental impacts. Sustainable landscapes create ecologically resilient communities better able to withstand and recover from episodic floods, droughts, wildfires, and other catastrophic events. They benefit the environment, property owners, and local and regional communities and economies.

SITES provides guidance and incentives that can transform land development and management practices towards regenerative design. Development of the SITES v2 (2018) Rating System has been a collaborative, interdisciplinary effort made possible by the input of more than 70 dedicated contributors, including technical advisors, practitioners, and representatives of professional, advocacy, and educational organizations. The SITES Rating System is intended to be a living product that will evolve over time as research and experience generate more knowledge.

6.3.1 CRITERIA AND PERFORMANCE MEASURES

SITES Initiative is a set of comprehensive, voluntary guidelines together with a rating system that assesses the sustainable design, construction, and maintenance of landscapes. It is used by landscape architects, planers, engineers, architects, developers, policy makers, and others to guide land design and development. The SITES v2 Rating System can apply to projects at various scales, with or without buildings, project types include: open spaces, streetscapes, commercial and educational/institutional campuses, residential neighborhoods and yards, military, and more.

The following guidelines and benchmarks serve as incremental steps to help transform traditional land development and management practices towards sustainability. These guidelines are meant to encourage site designers and developers to allow natural and built systems to work together to improve the long-term health of the environment and of socially and economically viable communities.

The measures listed below have been adapted from the criteria established by the American Society of Landscape Architects Sustainable Sites Initiative and are intended to supplement the U.S. Green Building Council's LEED-ND Rating System, described in Section 6.4 of this report. These measures are as follows:

Site Selection Considerations

- Protect floodplain functions by limiting new development within the 100¬year floodplain for waterways of all sizes;
- Avoid development of areas that contain wetlands;
- Preserve threatened or endangered species and their habitats;
- Select brownfields or greyfields for redevelopment;
- Encourage site development that is accessible by pedestrians, bicyclists and near public transit to reduce pollution and improve human health;

Water Considerations

- Reduce the use of potable water, natural surface water, and groundwater withdrawals for landscape irrigation after plant establishment;
- Encourage alternative irrigation methods and water conservation strategies;
- Protect and restore riparian, wetland and shoreline buffers;
- Manage stormwater on site by maintaining or restoring the water balance of the site;
- Design rainwater / stormwater features to provide a landscape amenity by integrating visually and physically accessible rainwater / stormwater features into the site in an aesthetically pleasing way;
- Design and maintain water features created in the landscape with minimal or no make-up water from potable sources or other natural surface or subsurface water resources in order to conserve water and other resources;

Soil and Vegetation Considerations

- Develop and implement an active management plan for the control and subsequent management of known invasive plants found on site to limit damage to local ecosystem services;
- Use appropriate, non-invasive plants to improve landscape performance and reduce resource use;
- Use appropriate vegetation that is native to the eco-region of the site;
- Preserve or restore plant communities native to the eco-region;
- Develop and communicate to construction contractors a soil management plan prior to construction to limit disturbance, assist soil restoration efforts and define the location and boundaries of all vegetation and soil protection zones;
- Identify and preserve all vegetation designated as special status by local, provincial or federal governments;
- Preserve or restore appropriate plant biomass on site;
- Plant vegetation in strategic locations around buildings to minimize building heating and cooling requirements;
- Use vegetation and reflective materials to reduce heat island effects;

Human Health and Well-Being Considerations

- Promote equitable site development and use;
- Promote sustainability awareness and education through interpretation of on-site features and processes to promote understanding of sustainability in ways that positively influence user behaviour on site and beyond;
- Protect and maintain unique cultural and historical places to enhance a site's sense of place and meaning;
- Provide for optimal site accessibility, safety and wayfinding by increasing user's ability to understand and safely access outdoor spaces;
- Provide on-site opportunities that encourage outdoor physical activity to improve human health;
- Provide views of vegetation and quiet outdoor spaces for mental restoration;
- Provide outdoor gathering spaces of various sizes and

Figure 190 & 191: Examples of Landscape Design Features for Stormwater Management

Figure 192 & 193: Reducing heat island effects and protecting appropriate trees on site are important sustainability considerations

6. Sustainability Considerations

orientations to accommodate groups, for the purpose of building community and improving social ties;
- Reduce light pollution by minimizing light trespass on site for the purpose of reducing sky-glow, increasing nighttime visibility and minimizing negative effects on nocturnal environments and human health and functioning.

Materials Selection Considerations

- Eliminate the use of wood from threatened tree species;
- Reuse salvaged materials and plants to conserve resources and avoid sending useful materials to the landfill;
- Use materials with recycled content to reduce the use of new materials and avoid sending useful materials to the landfill;
- Use certified wood to encourage exemplary forest management that is environmentally and socially responsible;
- Use materials, plants and soils that are sourced near the site to support the use of local resources, and promote a regional identity;
- Select paints, sealants, adhesives, coatings and other products that contain reduced amounts of volatile organic compounds (VOC) to reduce harmful health effects associated with air pollution;
- Support sustainable practices in plant production and materials manufacturing.

Construction Considerations

- Prevent and minimize discharge of construction site pollutants and materials to protect receiving waters, air quality, and public safety;
- Restore soils disturbed during construction in areas that will be revegetated;
- Divert construction and demolition materials generated by site development from disposal in landfills;
- Reuse or recycle vegetation, rocks, and soil generated during construction to achieve a net zero-waste site;
- Minimize the generation of greenhouse gas emissions and exposure to localized air pollutants during construction;

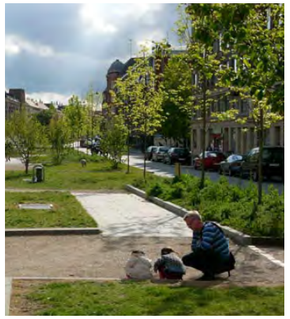


Figure 194 & 195: Provide Outdoor Gathering Spaces for Social Interaction and Community Events

Operations and Maintenance Considerations

- Develop a site maintenance plan that outlines the long-term strategies and identifies short-term actions to achieve maintenance goals;
- Provide space for storage and collection of recyclables in outdoor areas to facilitate recycling and reduce water generation;
- Recycle organic matter generated during site operations and maintenance;
- Reduce outdoor energy consumption for all landscape and exterior operations;
- Use renewable sources for landscape electricity needs to reduce greenhouse gas emissions and minimize air pollution;
- Minimize generation of greenhouse gases and exposure to localized air pollutants during landscape maintenance activities;
- Reduce emissions and promote the use of fuel-efficient vehicles by providing preferred parking for reduced emissions, high-fuel efficiency and / or carpools;

Monitoring and Innovation Considerations

- Monitor and document sustainable design practices to evaluate their performance over time and improve the body of knowledge on long-term site sustainability; and,
- Encourage and reward innovative sustainable practices for exceptional performance in all aspects of site design.

6.4 LEED FOR NEIGHBORHOOD DEVELOPMENT

6.4.1 CRITERIA AND PERFORMANCE MEASURES

LEED for Neighborhood Development (LEED-ND 2009) places a strong emphasis on site selection, design and construction elements compared to other LEED rating systems which focus mostly on green building practices. Bringing buildings and infrastructure together into a neighborhood and relating the neighbourhood to its landscape and local and regional context are focuses of LEED-ND. LEEDv4-ND 2018, the latest version of this rating system, is primarily designed for the planning and development of new green neighbourhoods, however, LEED-ND can also be used for existing neighborhoods as a tool to set performance levels and to shape new green infrastructure, such as sidewalks, alleys and public spaces.

The measures listed below have been adapted from the criteria established by the U.S. Green Building Council's LEED 2009 for Neighborhood Development Rating System, updated May 2011. These criteria are intended to supplement the American Society of Landscape Architects Sustainable Sites Initiative (2009) as described in Section 6.2 above. These measures are as follows:

6.4.1.1 SMART LOCATION AND LINKAGE

- Encourage improvement and redevelopment within existing communities and public transit infrastructure to reduce vehicle trips, vehicle miles traveled and promote daily physical activity associated with walking and bicycling.
- Encourage development in locations that have multi-modal choices or reduced motor vehicle use, reducing greenhouse gas emissions, air pollution, and other adverse environmental health effects associated with motor vehicle use.
- Promote bicycling and transportation efficiency and support public health by encouraging utilitarian and recreational physical activity through the implementation of a bicycle network as well as bicycle parking and storage.
- Encourage balanced communities with a diversity of uses and employment opportunities.
- Restore and conserve native plants, wildlife habitat, wetlands and water bodies.

6.4.1.2 NEIGHBOURHOOD PATTERN AND DESIGN

- Promote walking by providing safe, appealing and comfortable street environments that support public health by reducing pedestrian injuries and encouraging daily physical activity.
- Promote livability, walkability and transportation efficiency by prescribing compact development.

Figure 196 & 197: Multi-Modal Transportation Options Promote Physical Activity

- Promote development that is well connected to the community at large, and have high levels of internal connectivity.
- Encourage walkable street by ensuring that buildings along Yonge Street are close to the street, limiting the length of blank walls along sidewalks, keeping ground level retail visible at night, providing on-street parking, and ensuring there are continuous sidewalks on both sides of the street with minimal driveway entrances.
- Create mixed-use neighbourhood centres by clustering diverse land uses in accessible centres to encourage walking, cycling, and transit use.
- Encourage mixed-income diverse communities through ensuring the diversity of housing types and affordable housing options to promote socially equitable and engaging communities.
- Promote a reduced parking footprint by locating new off -street surface lots at the rear or side of buildings in order to increase the pedestrian orientation of buildings to the street and minimize the environmental effects of parking facilities.
- Encourage transit use by providing safe, convenient, and comfortable transit waiting areas and safe and secure bicycle storage facilities for transit users.
- Encourage access to civic and public spaces to improve physical and mental health and social capacity by providing a variety of open spaces close to employment and residential land

6. Sustainability Considerations

uses.
- Provide a variety of recreational facilities close to employment and residential land uses to facilitate physical activity and social networking.
- Ensure accessibility through universal design of all streetscape elements (see Section 7 for AODA requirements for the built environment).

Figure 198 & 199: Bicycle Parking and Storage Should Be Provided to Promote Active Transportation

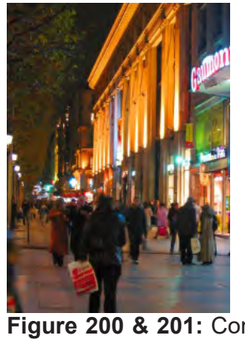



Figure 200 & 201: Compact Mixed-Use Developments Provides for Active and Walkable Streets

- Promote community-based food production, support local farmers and improve nutrition through increased access to fresh produce and proximity to Farmers' Market (such as the Old Thornhill Village Farmers' Market).
- Ensure tree-lined and shaded streets to reduce the urban heat island effect, improve air quality and encourage walking, bicycling and transit use.

6.4.1.3 GREEN INFRASTRUCTURE AND BUILDING

- Encourage the design, construction and retrofit of buildings that utilize green building practices.
- Encourage the design and construction of energy-efficient buildings that reduce air, water and land pollution and adverse environmental effects from energy production and consumption.
- Reduce effects on natural water resources and reduce burdens on community water supply and wastewater systems through building and streetscape water efficiency.
- Reduce pollution from construction activities by controlling soil erosion, waterway sedimentation and airborne dust generation.
- Limit or eliminate the use of potable water and other natural surface or subsurface water resources for landscape irrigation.
- Preserve historic resources and cultural landscapes in a manner that preserves historic materials and character-defining features.
- Preserve existing non-invasive trees, native plants and pervious surfaces, where possible.
- Retain stormwater on site, through infiltration, rain gardens, evapotranspiration and / or reuse;
- Reduce heat islands by providing shade from open structures, use paving materials that have a Solar Reflectance Index (SRI) of at least 29, use pervious pavement (at least 50%), and provide shade from tree canopy.


Figure 202 & 203: Encourage the Design of Buildings That Employ Green Building Practices

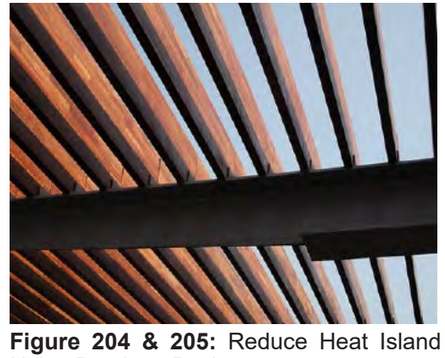



Figure 204 & 205: Reduce Heat Island Effect by Providing Shade and Using Pervious Paving

- Encourage on-site renewable energy production to reduce adverse environmental and economic impacts associated with fossil fuel production and use.
- Encourage the use of energy efficient infrastructure including traffic lights, street lights, and water / waste water pumps to reduce energy consumption.
- Encourage the use of recycled and reclaimed materials in infrastructure elements such as roadways, parking lots, sidewalks, unit paving, etc.

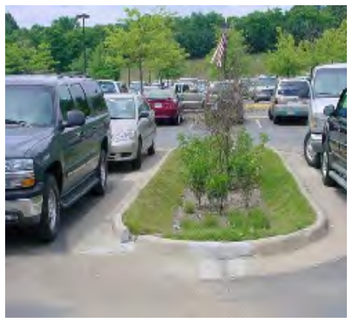


Figure 206 & 207: Rain gardens and bioswale parking areas is an example of the low impact development (LID) approach to storm water management.

- Reduce light pollution to minimize light trespass, reduce sky-glow and improve nighttime visibility along the streetscape.

6.4.1.4 INNOVATION AND DESIGN PROCESS

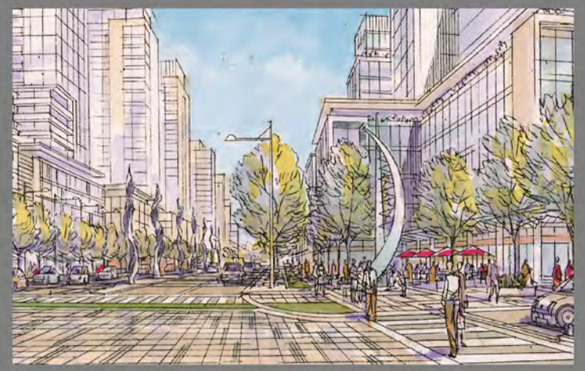
- Encourage innovative and exemplary performance in green building, smart growth, or new urbanism categories not specifically addressed by LEED for Neighborhood Development Rating System.
- Encourage strategies that address geographically specific environmental, social equity and public health priorities.

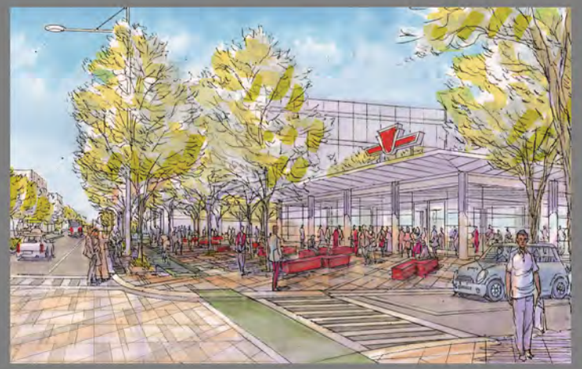
6.5 TREE AND PLANTING MAINTENANCE

Maintenance personnel should be consulted early in the design process, both so the designer understands their concerns and they understand the sustainability and other design objectives for the project. Ongoing training and education of maintenance staff is also useful. A maintenance plan and budget should be an integral part every design project. Business Improvement Areas, development corporations, adjacent land owners, concessions and non-profit support groups should be considered as sources of funding for maintenance and operations.

Generally, maintain the quality of soil by annual application of good quality mulch, such as composted pine bark mulch. Monitoring of soil and vegetation should occur regularly and remedial action (fertilization, insect and disease control and corrective pruning) taken as required. Maintenance plans should reference to York Region's Maintenance Practices.

Recently, irrigating street trees manually fourteen times annually is no longer a maintenance practice in York Region. As stated in York Region's Landscape Design Manual (2018), all boulevard and median landscape plantings in the Urban site context on Regional roadways to be maintained by York Region must incorporate subsurface dripline Irrigation systems compatible with the Region's RainBird IQ Centralized Irrigation Control System. York Region Dripline Irrigation Design Guidelines shall be referred to when developing dripline irrigation plans.





7

ACCESSIBILITY CONSIDERATIONS

7.1 PHILOSOPHY AND APPROACH

The accessibility philosophy for the South Yonge Street Corridor Streetscape Master Plan emphasizes the need to ensure the provision of generous pedestrian spaces and great service to all users – those who live, work, play and visit the Yonge Street corridor.

Barrier-free access within the public realm shall be ensured to make the built environment safe, accessible, and usable by everyone. This will guarantee longevity of design and will provide a space that can be enjoyed and used by people of all ages and abilities.

Accessible elements should be incorporated along the streetscape, including wayfinding standards that are universally accessible for all users and integrated with the street design /site furniture. All wayfinding elements should comply with the Information and Communication Standards of the Integrated Regulation of the Accessibility for Ontarians with Disabilities Act (AODA) to ensure that the streetscape can be enjoyed by all people.

The master plan complies with the Integrated Accessibility Standards Regulation (Ontario Regulation 191/11) of the AODA and are flexible to change if any additional items are added at a later time. It should be noted that the AODA document is currently in draft form and has not been approved; the streetscape design shall conform to the standards in place at the time of implementation.

The following standards are related to Exterior Spaces and Communication Elements, specific to the Yonge Street Corridor Streetscape Master Plan.

Figure 208 & 209: Streets And Public Spaces Shall Be Aoda Compliant to Provide Barrier-Free Access to All Users.

7. Accessibility Considerations

7.2 EXTERIOR SPACES

7.2.1 CRITERIA AND TECHNICAL REQUIREMENTS

The Accessibility for Ontarians with Disabilities Act (AODA) seeks to ensure that all Ontarians have fair and equitable access to programs and services and to improve opportunities for persons with disabilities. The following standards and technical requirements, as stated within the AODA Final Proposed Accessible Built Environment Standard (July 2010), are intended to be used for the built environment, in particular, exterior spaces.

7.2.1.1 Accessible Exterior Route

Exterior paths of travel consist of sidewalks and walkways as well as associated elements including curbs, ramps, stairs, handrails and landings. They serve a functional purpose for pedestrian travel. Accessible exterior routes should facilitate pedestrian circulation and ensure a clear path of travel in order to provide the full range of capabilities of the individuals that may use them. Paths of travel should be free from safety hazards or barriers that may impede users. Avoid the use of irregular surfaces, such as cobblestones, as these surfaces are difficult for both walking and pushing a wheeled mobility device.

Exceptions to the Requirements for Exterior Paths of Travel

Accessible exterior routes and walkways shall comply with the following requirements, except where compliance would

- cause substantial harm to cultural, historic, religious, or significant natural features or characteristics;
- require construction methods or materials that are prohibited by federal, provincial, or local law, other than laws whose sole purpose is to prohibit use by persons with disabilities; or
- be impractical due to physical terrain or other site constraints such as existing underground utilities

Variances

Should the criteria for exception occur, then the conditions on the exterior walk and walkways may vary to the extent indicated, but the variance should always be the minimum required over the shortest distance possible.

Clear Width

The minimum clear width for accessible exterior routes and walkways shall

a) be 1500 mm;

b) if one or more of the criteria for exception exists, the width of the exterior walk and walkways may be reduced to a minimum of 1200 mm, provided that passing spaces of at least 1830 mm in width and 2200 mm in length are provided at intervals not to exceed 50 m; and

c) be reduced to 920 mm at curb ramps.

Notes: (1) The permitted reduction should be as small as possible, and it should continue for the shortest distance possible. (2) The minimum clear width does not include objects (e.g., cars, etc) that could overhang into the accessible exterior route.

Slope

- Running slopes for exterior routes, including sidewalks and walkways shall be a maximum of 5%.
- Cross slopes should be a maximum of 5% where the surface is asphalt, concrete or another hard surface, or no ore than 10% in all other cases.

Exterior Surface

The exterior surface should be firm, stable and slip-resistant. Where an exterior path has openings in its surface, such as grates or other objects placed in the ground to provide drainage or ventilation, the openings should not have a diameter of more than 13 mm.

Tonal and Tactile Contrast

To be effective for people with low vision, tonal contrast between materials can be achieved by selecting materials that have a difference of at least 70% in their light reflectance values (LRV). Tonal and Tactile Contrast should be used to

a) distinguish the edges of the accessible exterior routes; and

b) clearly distinguish the exterior walk from vehicular routes.

Changes in Level

Elevation change less than 75 mm should be designed with a running slope of maximum 1:8 (12.5%) or a curb ramp; and elevation change of 75 mm - 200 mm should be designed with a running slope of maximum 1:10 (10%) or curb ramp. And finally, elevation changes greater than 200 mm should be designed as a ramp.

Edge Protection

Where a walkway is located next to an area which slopes down, or is adjacent to a potential hazard such as a water feature, providing edge protection should be considered to enhance safety. A curb at least 50 mm high, a railing or other barrier may be used. For grade differentials greater than 600 mm, guards should be provided.

Ramps

Where an exterior path of travel is equipped with a ramp, the ramp should not be steeper than 1:15 (6.7%). Further details pertaining to AODA complaint ramps can be found in Section 80.24 of the Integrated Accessibility Standards Document.

7.2.1.2 CURB RAMPS

Curb ramps help people with disabilities safely and independently negotiate level changes on public sidewalks and other pedestrian routes. A curb ramp is defined as the connecting route between the vehicular travel lanes including, but not limited to, pedestrian crossings, designated accessible parking space, passenger drop-off areas, and access aisles and the adjacent exterior walkway. A curb ramp is required when the elevation of the vehicular route is different from the elevation of the exterior walkway, such as at all intersections along Yonge Street.

Where pedestrians are expected to cross a roadway, or access a roadway to board a vehicle, a curb ramp or a depressed curb provides a smooth transition for people who use mobility aids.

Figure 210 & 211: Accessible Exterior Routes And Curb Ramps Contribute to a Vibrant Streetscape.

Running Slope

Curb ramps shall have

a) a running slope that is a maximum of 10%;

b) a counter slope of gutters and road surfaces immediately adjacent to the bottom of the curb ramp that is not steeper than 5%. The curb ramp shall not create a sudden transition that would impede the transition of the pedestrian from the vehicular route to the curb ramp; and

c) the difference between the curb ramp and all surrounding surfaces of not more than 10%.

Cross Slope

The cross slope on curb ramps shall

a) be the minimum required for drainage;

b) not exceed 2% on paved surface or 5% on unpaved surfaces;

c) not have a difference between the curb ramp and all surrounding surfaces of more than 10%.

Curb Ramp Sides

Return Curb

Wherever possible a return curb shall

a) be used over the full length of the curb ramp; and

b) have high tonal contrast and/or texture of at least 70% at the outside of the return curbs to clearly designate them as not intended for pedestrian travel.

Note: The return curb design provides a hard, detectable edge on both sides of the curb ramp that prevents people from unintentionally moving off of the curb ramp surface and provides directional guidance to people with low or no vision.

Flared Sides

Flared sides shall not be permitted for new construction or extensive alteration unless existing infrastructure prevents the installation of perpendicular or parallel curb ramp design. The flared sides shall

a) not be steeper than 12%; and

b) be clearly demarcated and grooved.

The intent of this clause is to limit the use of curb ramps with flared sides. There may be situations where a curb ramp with flared sides is the only option, so flexibility is needed.

Walkway Clear Width at Top of Curb Ramp

A minimum clear width of at least 920 mm shall be provided on exterior walkways at the top of a curb ramp. This will serve as a transition area where pedestrian traffic can bypass the curb ramp.

7. Accessibility Considerations

Width

The width of a new or redeveloped curb ramp should be at least 1500 mm. The minimum clear width however, may be reduced to 1200 mm to accommodate the flared sides and base ramp features of the curb ramp design.

Drainage

Curb ramp design shall provide for drainage to minimize water accumulation on the accessible route.

7.2.1.3 PEDESTRIAN CROSSING

This section addresses the accessibility of pedestrian crossings, across vehicular roadways / driveways at the points where individuals will normally be expected to cross, including through or across intermediate islands within the road system. In all situations involving pedestrian / vehicular conflict, pedestrian safety is most important.

Accessible Route

Pedestrian crossings shall provide a continuous, clear, and linear accessible route across the vehicular route. Wherever possible, the path of travel shall be perpendicular to the vehicular route.

Curb Ramps

Curb ramps at pedestrian crossings shall be parallel to the direction of travel;

Edge Markings

Edge markings shall be provided at both sides of pedestrian crossings that

a) are at least 200 mm wide;

b) are marked with permanent white; and

c) have a surface texture (e.g., textured concrete, etc.) to distinguish them from the main pedestrian crossing path of travel and vehicular route/roadway.

Traffic Islands

Where traffic islands are provided within a pedestrian crossing, they should

a) have a level area for pedestrians to wait to cross that is a minimum of 1600 mm by 1600 mm;

b) be cut through level with the street or have curb ramps at both sides; and

c) have tactile walking surface indicators at both ends of the island crossing.

7.2.1.4 PEDESTRIAN CROSSING SIGNALS

This section addresses the accessibility of pedestrian crossing signals at pedestrian crossings across vehicular roadways, including designated crosswalks and signalized intersections.

Pedestrian crossing controls and standards are important for public safety to increase awareness that an intersection is equipped with audible pedestrian signals; indicate where the push button is located; provide additional information; assist with orientation / direction; and enable independent operation of controls.

It is required that audible pedestrian crossing signals are installed in high density areas, or where deemed necessary and shall comply with all Provincial requirements.

Figure 212: Audible Pedestrian Signals Are Important for Accessible Streets

7.2.1.5 STREET FURNITURE

Street furniture provides a resting place for individuals with difficulty walking distances. This furniture shall incorporate strong tonal contrasts and be located off pathways, in order to minimize the potential as an obstruction for pedestrians.

Street furniture includes benches, bollards, lighting elements, planters, permanent signage and temporary signage. Street furniture also includes amenities that provide a specific service or function to the public which complements outdoor spaces, right-of-

ways and routes. These elements include bike racks, information kiosks, newspaper boxes, recycling stations, waste receptacles, etc.

Accessible Route
Street furniture and amenities and the placement of street furniture and amenities relative to accessible routes shall
a) not be placed within the accessible exterior route itself; and
b) not require the movement or temporary removal of an element to provide access to and use of street furniture.

Tonal Contrast
The ground surface where the street furniture and amenities are located shall have a tonal contrast of at least 70% from the accessible route and a texture difference.

Operating Mechanisms
The operating mechanisms on amenities, where supplied, shall be designed so that they do not interfere with features intended to prevent the inappropriate use of the amenities (e.g., by animals or children).

Amenities — Seating and Benches
Seating and benches shall
a) have a seating / bench surface located at a height of 430 mm to 500 mm above the surrounding grade;
b) be 380 mm to 510 mm deep;
c) provide back rests for 50% of the seating positions; and
d) provide a minimum of one arm rest opposite of the wheeled mobility device parking space.

7.2.1.6 EXTERIOR PEDESTRIAN LIGHTING
This section addresses lighting systems and elements along exterior accessible routes such as sidewalks, pathways, stairs and ramps. The level of illumination is one factor to be taken into consideration related to accessible lighting for exterior pedestrian facilities. The even distribution of light and the reduction of glare or other reflective surfaces play a significant role and shall be considered.

Location
Exterior pedestrian lighting shall be provided
a) on accessible exterior routes;
b) on accessible exterior routes leading to public buildings; and
c) at accessible building entrances, passenger loading zones, and accessible parking facilities.

Note: Accessible exterior routes and walkways that service buildings do not include trails and pathways within parks and other natural environments, or privately owned homes.

Light Levels
Exterior pedestrian lighting shall
a) be evenly distributed over the accessible route;
b) be positioned so as to not cause any obstruction, protrusions, or tripping hazard;
c) along an accessible exterior route, illuminate the walk to at least 100 lx, measured at ground level;

Glare
Lighting fixtures (luminaries) that do not provide a view of the light source, either directly or by specular reflection, from common lines of sight shall be used.

Colour
Light sources shall provide as full a spectrum of light as possible as an aid to edge and colour definition.

Supplementary Lighting
Where supplementary lighting, such as landscape or accent lighting, is provided, it shall be designed and incorporated into the site so as not to spill onto exterior walkways or cause glare conditions.

Figure 213: Tactile Attention Surface Indicators Located at Curb Ramps

7. Accessibility Considerations

7.2.1.7 TACTILE WALKING SURFACE INDICATORS

Tactile walking surface indicators are used to identify potential hazards through the use of distinct change in colour and texture. These surface indicators have a texture that can be felt under foot or detected by persons using a cane, and are important navigational cues for persons with low or no vision.

Typical locations for tactile walking surface indicators include alerts for crosswalks, ramps, stairs or drop-offs at transit platforms. These indicators shall be used consistently throughout the Yonge Street Corridor Streetscape.

Tactile Attention Surface Indicators

A tactile attention indicator shall be composed of truncated domes
a) with a height of 5 ± 1 mm;
b) with the top diameter between 12 mm and 15 mm and the base diameter 10 ± 1 mm greater than the top diameter;
c) arranged in a square grid; and
d) with a center to center distance of adjacent domes of 55 - 61 mm (preferable), optimal for detection and discrimination underfoot.

Tactile attention indicators shall be located at curb ramps or an entry into a vehicular route or area where no curbs or other elements separate it from a pedestrian route.

Pedestrian and Vehicular Intersection

If a pedestrian walk crosses or joins a vehicular way and the walking surfaces are not separated by curbs, railings, or other elements between the pedestrian areas and vehicular areas, the boundary between the areas shall
a) be defined by a continuous tactile attention surface indicator along the full length of the crossing boundary between the walking surface and the vehicle way; and
b) have a depth of at least 920 mm.

Curb Ramps

Tactile attention surface indicators at curb ramps shall
a) be provided at the top and bottom of the curb ramp;
b) extend the full width of the ramp;
c) have a length of 600 mm to 650 mm, starting at 150 mm to 200 mm from the curb; and
d) comply with Tactile Attention Surface Indicators Standards.

7.3 COMMUNICATION ELEMENTS

7.3.1 CRITERIA AND TECHNICAL REQUIREMENTS

The following standards and technical requirements, taken from the Integrated Accessibility Standards Regulation (Ontario Regulation 191/11) of the AODA, are intended to be used for the built environment, in particular, communication elements such as signage and wayfinding elements.

7.3.1.1 SIGNAGE

This section addresses signage system accessibility for permanent and temporary signage.

Signage shall be simple, uncluttered and incorporate plain language. Sharp contrast in colour makes signage easier for everyone to read. Using graphic symbols is helpful for individuals with limited literacy or cognitive abilities or those who speak a different language. The intent of these symbols must be clear, culturally universal and intuitive.

As per the AODA regulations, the text on the signs must have a high tonal contrast with its background in order to assist with visual recognition. A sans serif font is required. In typography and lettering, a sans-serif letter form is one that does not have extending features called “serifs” at the end of strokes.

Street signage must be legible and incorporate audible signage.

Figure 214: Aoda Complaint Sans Serif Font Examples

General Signage Features / Characteristics

Print letters and numerals on signage should
a) be a sans serif font;
b) be a mixture of upper and lower case;
c) have a stroke-width-to height ratio between 1:5 and 1:10 that is based on an uppercase “O”;

This can be used by people with little or no vision.
d) have a character height in accordance with the functional viewing distance one can reasonably approach on an accessible path of travel, based on an uppercase “O”;
e) have a tonal contrast of at least 70% with their background; and
f) be finished with a matte or glare-free surface.

Tactile characters should
a) be raised at least 0.8 mm (0.03 in) above the surface;
b) be between 16 mm (0.63 in) and 50 mm (2 in) high;
c) be sans serif font;
d) be smooth at its edges;
e) be accompanied by Grade 1 Braille; and
f) have a tonal contrast of at least 70% with the signage background.

Pictograms should
a) have a minimum height and width of 150 mm;
b) where possible, be consistent with national and international standards; and c) have a tonal contrast of at least 70% with the signage background.

All signage shall use lettering and numerals that comply with General Signage Features / Characteristics Standards and be located to avoid shadow areas and to minimize glare.

Street Signage shall
a) be reflective; and
b) comply with Exterior Pedestrian Lighting Standards.

All regulatory and warning signs shall be tactile and in accordance with Tactile Characteristics Standards, as described above.

7.3.1.2 WAYFINDING

This section addresses wayfinding in the built environment. Creating “orientation cues” within the environment allow people to create a mental “map” of the overall environment and the desired destination. These cues include the design of buildings, use of signage, placement of furnishings, lighting, use of colour, texture and acoustics, etc.

Design Principles

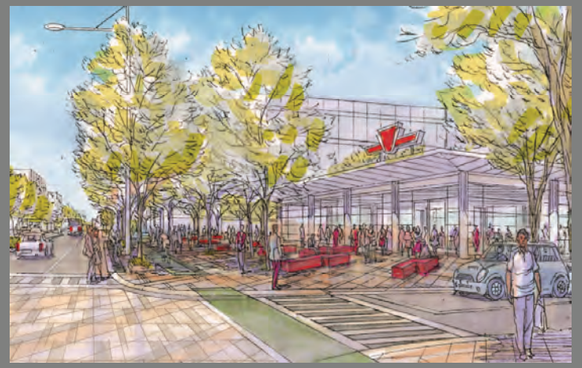
Any combination of the following design principles may be used to support wayfinding in the built environment:
a) Provide a logical layout that is easy to memorize for a person with no/low vision;
b) Use textural contrasts and tactile cues with the built environment to provide directional cues;
c) Define the space with acoustic characteristics;
d) Use colour and brightness contrasts to accentuate the structural and decorative design of the exterior built environment;
e) Use tactile signs to provide information that can be read by touching;
f) Use audible signs to provide information that can be heard by everyone; or
g) Use lighting to differentiate one area from another.
Note: The intent of wayfinding is to consider the use of design and maintenance of a built environment from the wayfinding perspective of people who have no / low vision.

Wayfinding Systems

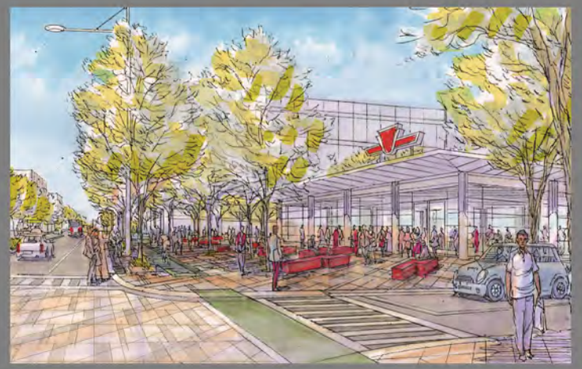
The design of wayfinding systems shall include
a) identifying and marking spaces;
b) grouping spaces;
c) linking and organizing spaces; and
d) communicating this information to the user.

General Requirements

A wayfinding system shall
a) be understandable to people of differing abilities;
b) be on the accessible route;
c) be provided in external areas that include, but are not limited to,
    i. parking areas;
    ii. building sites with more than one building;
    iii. passenger loading zones;
    iv. accessible entrances;
    v. public streets;
    vi. accessible exterior routes; and
    vii. open plazas.
d) have signage that identifies areas that include, but are not limited to,
    i. directions including street orientation; and
    ii. items listed in (c) above;
e) use colour and textured surfaces to distinguish pathways;
f) have a tonal contrast of at least 70% with their surroundings;
g) where applicable, use pictograms and universal symbols;
h) be modified to account for changes made to the external environment; and
i) be of consistent design and location throughout a specific area.



APPENDICES



APPENDIX 1:

RECOMMENDED TREES, PLANTS AND SHRUBS

ACCEPTABLE SHRUB AND PERENNIAL SPECIES FOR REGIONAL ROAD ALLOWANCES

- A minimum of 75% of planting should be selected from the proven performing list
- A maximum of 25% of planting should be selected from the notable performing list

TABLE 1: PROVEN PERFORMING SHRUBS		
Botanical Name	**Common Name**	**Characteristics**
Aronia meloncarpa	Black chokeberry	Height 120cm Spread 180cm Full Sun to part shade
Myrica pensylvanica	Northern Bayberry	Height 120cm Spread 180cm Full Sun to part shade Fragrant leaves, bright fall colour Spreads underground to form clumps Native
Potentilla Fruticosa 'Abbotswood'	Abbotswood Potentilla	Height 90cm Spread 120cm Upright, bushy habit, hardy and resistant to disease; needs full sun and well-drained soil
Potentilla Fruticosa 'Goldstar'	Goldstar Potentilla	Height 90cm Spread 120cm Upright, bushy habit, hardy and resistant to disease; needs full sun and well-drained soil
Rhus aromatic 'Gro-Low'	Gro low Sumac	Height 80cm Spread 200cm Fast growing-spreading Tolerates poor soil Full to partial sun

TABLE 1: PROVEN PERFORMING SHRUBS		
Botanical Name	**Common Name**	**Characteristics**
Rhus aromatic	Fragrant Sumac	Height 120cm Spread 180cm Full Sun to part shade Fragrant leaves, bright fall colour Spreads underground to form clumps Native
Rhus typhina	Staghorn Sumac	Height 480cm Spread 600cm Full to part sun Cutting it back to the ground in midwinter every three of four years reinvigorates the plant. Salt tolerant, any soil type.
Rosa rugosa	Japanese Shrub Rose/Saltspray Rose	Height 150cm Spread 200cm Upright, bushy and suckering habit, extremely hardy and resistant to disease; needs full sun and well-drained soil Flowers continuously, hips/seed head good contrast
Sorbaria sorbifolia	False Spirea	Height 180cm Spread 180cm Upright, bushy and suckering habit, extremely hardy and resistant to disease; needs full sun and well-drained soil Flowers continuously

A1. Acceptable Tree, Shrub and Perennial Species for Regional Road Allowances (York Region Landscape Design Manual (2018))

TABLE 2: NOTABLE PERFORMING SHRUBS		
Botanical Name	**Common Name**	**Characteristics**
Cornus sericea	Red Osier Dogwood	Height 150cm Spread 120cm Upright habit, hardy and resistant to disease; needs full sun and well-drained soil
Hydrangea arborescens 'Annabelle'	Annabelle Hydrangea	Height 120cm Spread 120cm Upright, bushy habit, hardy and resistant to disease; needs full sun and well-drained soil
Spirea japonica 'Goldflame'	Goldflame Spirea	Height 120cm Spread 120cm Upright, bushy habit, hardy and resistant to disease; needs full sun and well-drained soil
Spirea japonica 'Goldmound'	Goldmound Spirea	Height 120cm Spread 120cm Upright, bushy habit, hardy and resistant to disease; needs full sun and well-drained soil
Syringa meyeri 'Palibin'	Dwarf Korean Lilac	Height 120cm Spread 120cm Upright, compact habit, hardy and resistant to disease; needs full sun and well-drained soil

TABLE 3: PROVEN PERFORMING PERENNIALS		
Botanical Name	**Common Name**	**Characteristics**
America maritime 'splendens'	Sea Thrift	Height 25cm Spread 25cm Variety of flower colours Sun-part sun, well-drained soil
Calamagrostis x acutiflora	Feather Reed Grass	Height 100cm Spread 50cm Full Sun Drought tolerant
Hemerocallis sp.	Daylily	Vary in sizes depending on variety. Once established, needs only occasional watering. Partial to full sun. Requires deadheading
Panicum virgatum 'Heavy metal'	Blue Switch Grass	Height 100cm Spread 100cm Full Sun Drought tolerant
Panicum virgatum 'Rotsrahlbushc'	Red Switch Grass	Height 100cm Spread 100cm Full Sun Drought tolerant
Panicum virgatum 'Shenandoah '	Red Switch Grass	Height 100cm Spread 100cm Full Sun Drought tolerant
Sedum spectabile 'Autumn Joy'	'Autumn Joy' Sedum	Height 35cm Spread 45cm Full sun-part shade Flowers late summer to late fall

TABLE 4: NOTABLE PERFORMING PERENNIALS		
Botanical Name	**Common Name**	**Characteristics**
Cerastium tomentosum	Snow'n summer	Height 20cm Spread 45cm snow-in-summer will slowly spread, creating a carpet of white blooms that cover the plant in spring to early summer Sun.
Coreopsis verticillata 'Zagreg'	Threadleaf Coreopsis	Height 75cm Spread 45cm Variety of flower colours Sun-part sun
Dianthus sp.	Carnations/Pinks	Height 75cm Spread 45cm Variety of flower colours Sun-part sun Salt tolerant Varieties: Helen Allwood pinks, Little Boy Blue pinks, Spotti pinks
Echinacea purpurea 'Magnus'	Purple Coneflower	Height 90cm Spread 90cm Flowers summer to fall. Full sun, well-drained soil
Perovskia atriplicifolis	Russian Sage	Height 90cm Spread 70cm Flowers summer to fall Full sun, well-drained soil
Rudebeckia fulgida 'Goldsturm'	Goldsturm Black Eyed Susan	Height 90cm Width 90cm Flowers mid-summer into fall. Full sun, well-drained soil

A1. Acceptable Tree, Shrub and Perennial Species for Regional Road Allowances (York Region Landscape Design Manual (2018))

ACCEPTABLE TREE SPECIES FOR REGIONAL ROAD ALLOWANCES

- A minimum of 75% of planting should be selected from the proven performing list
- A maximum of 25% of planting should be selected from the notable performing list

TABLE 1: PROVEN PERFORMING FULL FORM TREES

Botanical Name	Common Name	Characteristics
Acer saccharinum	Silver Maple	Develops large crown, plant in locations with adequate space
Aesculus glabra	Ohio Buckeye	Showy flower spikes followed by seed husks covered in soft spines. Less susceptible to leaf scorch and leaf blotch than horsechestnut
Aesculus hippocastanum	Horsechestnut	Showy flower spikes, less seed production than Ohio buckeye, seed husks covered in soft spines Susceptible to leaf scorch and leaf blotch
Gleditsia triacanthos var. inermis	Honeylocust	Small leaves provide a filtered shade Can be susceptible to defoliation by leafhoppers Acceptable cultivars for Regional roads include: Shademaster
Gymnocladus dioicus	Kentucky Coffee Tree	Coarse branching structure, large double-compound leaves with small leaflets. Dioecious tree with male and female plants, male tree preferred
Ulmus japonica x 'Ulmus Wilsoniana'	Accolade Elm	Shown to be tolerant to the growing conditions on Regional road allowances. Develops a large upright crown.

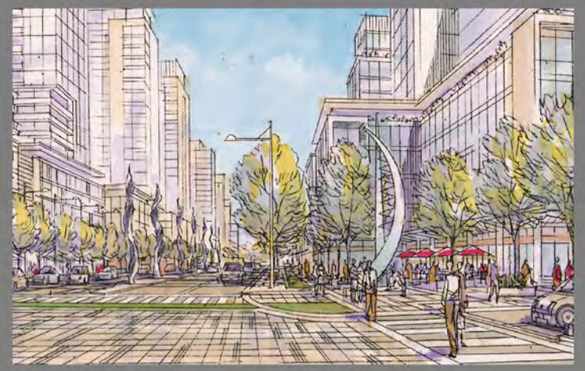
TABLE 2: NOTABLE PERFORMING FULL FORM TREES

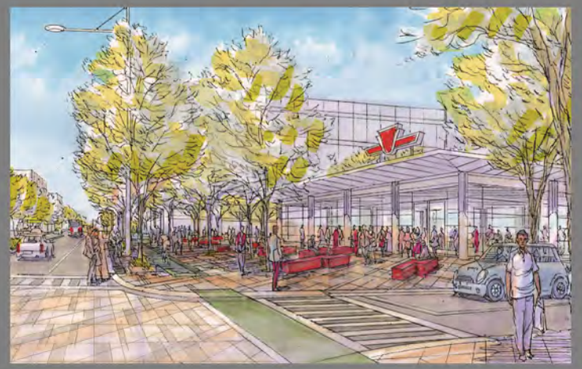
Botanical Name	Common Name	Characteristics
Acer x freemanii 'Autumn Blaze'	Autumn Blaze Maple	Sensitive to desiccation from winter winds. Use in locations sheltered from prevailing winds.
Catalpa speciosa	Northern Catalpa	Has shown tolerance to Regional road conditions. Coarse tree with brittle branches and unusual form. Showy in spring.
Celtis occidentalis	Hackberry	Sensitive to de-icing salts (airborne spray). Use in locations where exposure to salt spray will be minimized, e.g. wide boulevards (6 m +) on the north and west sides of roads.
Quercus bicolor	Swamp White Oak	Of the oak species, this has shown the greatest tolerance to Regional road conditions. Still considered sensitive to de-icing salts (airborne spray). Use in locations where exposure to salt spray will be minimized, e.g. wide boulevards (6 m+) on the north and west sides of roads.
Quercus macrocarpa	Bur Oak	Has shown tolerance to Regional road conditions. Still considered sensitive to de-icing salts (airborne spray). Use in locations where exposure to salt spray will be minimized, e.g. wide boulevards (6 m+) on north and west sides of roads.

TABLE 2: NOTABLE PERFORMING FULL FORM TREES		
Botanical Name	**Common Name**	**Characteristics**
Tilia cordata	Littleleaf Linden	Sensitive to desiccation from winter winds and de-icing salt. Plant in locations were exposure to salt spray will be minimized, e.g. wide boulevards (6 m+) on the north & west sides of roads and in a location sheltered from prevailing winds. Acceptable cultivars for Regional roads include: Glenleven and Greenspire
Picea glauca	White Spruce	More sensitive to desiccation from winter winds and de-icing salt than Colorado or Norway spruces. Plant a minimum of 6 m from edge of road, and preferably in a sheltered location. Should always be planted behind sidewalk/pedestrian zone. Can be susceptible to yellow-headed spruce sawfly defoliation.
Picea abies	Norway Spruce	Sensitive to desiccation from winter winds and de-icing salt. Plant a minimum of 6 m from edge of road, and preferably in a sheltered location. Should always be planted behind sidewalk/pedestrian zone. Fairly pest and disease resistant.
Pinus nigra	Austrian Pine	Sensitive to desiccation from winter winds and de-icing salt. Plant a minimum of 6 m from edge of road, and preferably in a sheltered location. Should always be planted behind sidewalk/pedestrian zone. Susceptible to Diplodia blight, select locations with good air flow and avoid mass plantings of this tree.

TABLE 3: PROVEN PERFORMING SMALL FORM (Hydro Acceptable) TREES		
Botanical Name	**Common Name**	**Characteristics**
Prunus virginiana 'Schubert'	Schubert Cherry	Very susceptible to black knot, requires annual pruning to control fungus. Prone to suckering from base of tree
Syringa reticulata	Ivory Silk Lilac	Showy lilac-like blooms in early summer, followed by seed capsules that persist on the tree. Fairly pest and disease resistant.

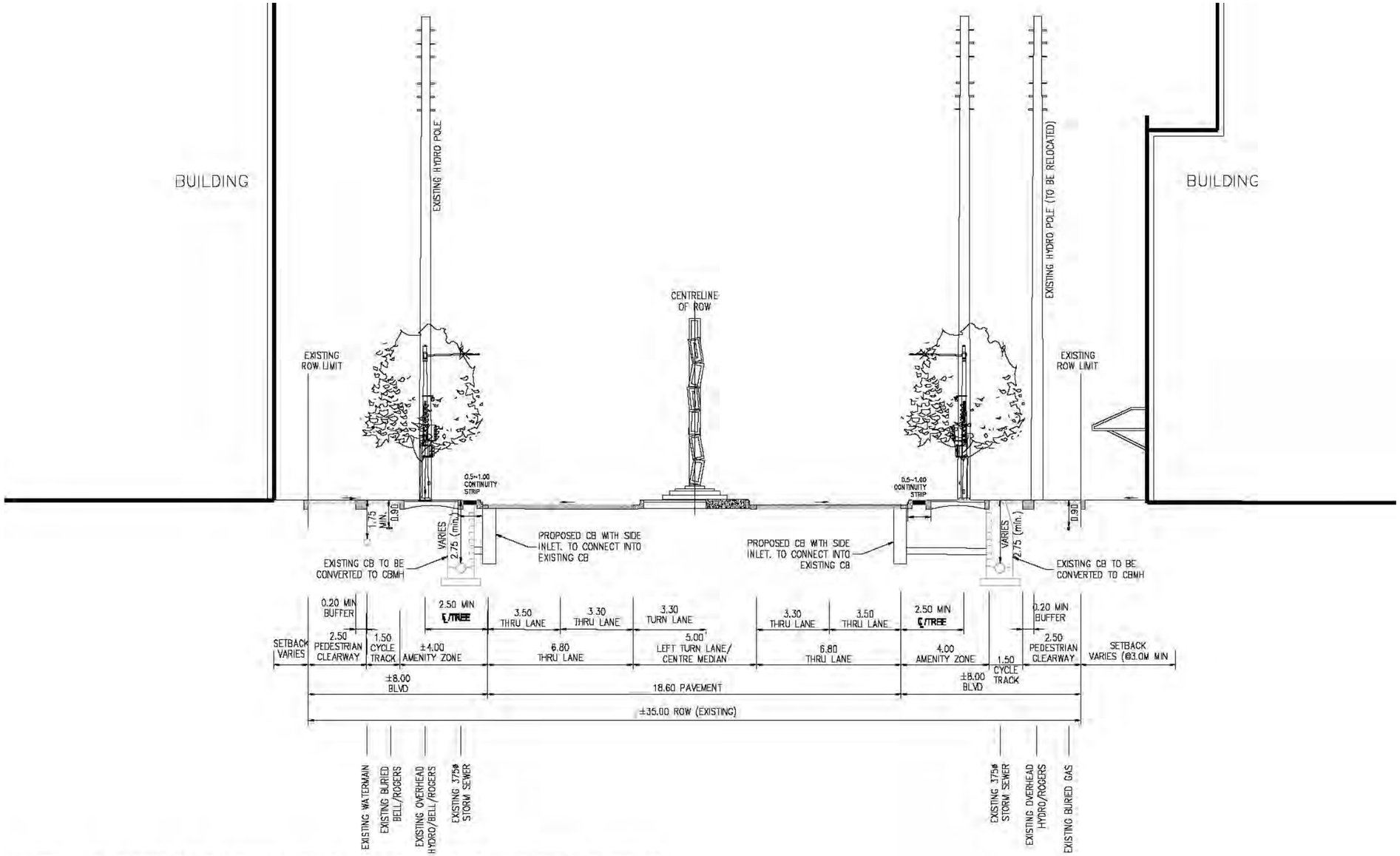
TABLE 4: NOTABLE PERFORMING SMALL FORM (Hydro Acceptable) TREES		
Botanical Name	**Common Name**	**Characteristics**
Acer campestre	Hedge Maple	Sensitive to desiccation from winter winds. Use in locations sheltered from prevailing winds.
Acer ginnala	Amur Maple	Sensitive to desiccation from winter winds. Use in locations sheltered from prevailing winds. Cultivar 'Ruby Slippers' has been shown to be less susceptible to frost cracks.
Acer tartaricum	Tartarian Maple	Sensitive to desiccation from winter winds. Use in locations sheltered from prevailing winds.
Pyrus calleryana	Ornamental Pear	Sensitive to desiccation from winter winds. Use in locations sheltered from prevailing winds. Acceptable cultivars for Regional roads include: Chanticleer Pear





APPENDIX 2:
UTILITIES LOCATION

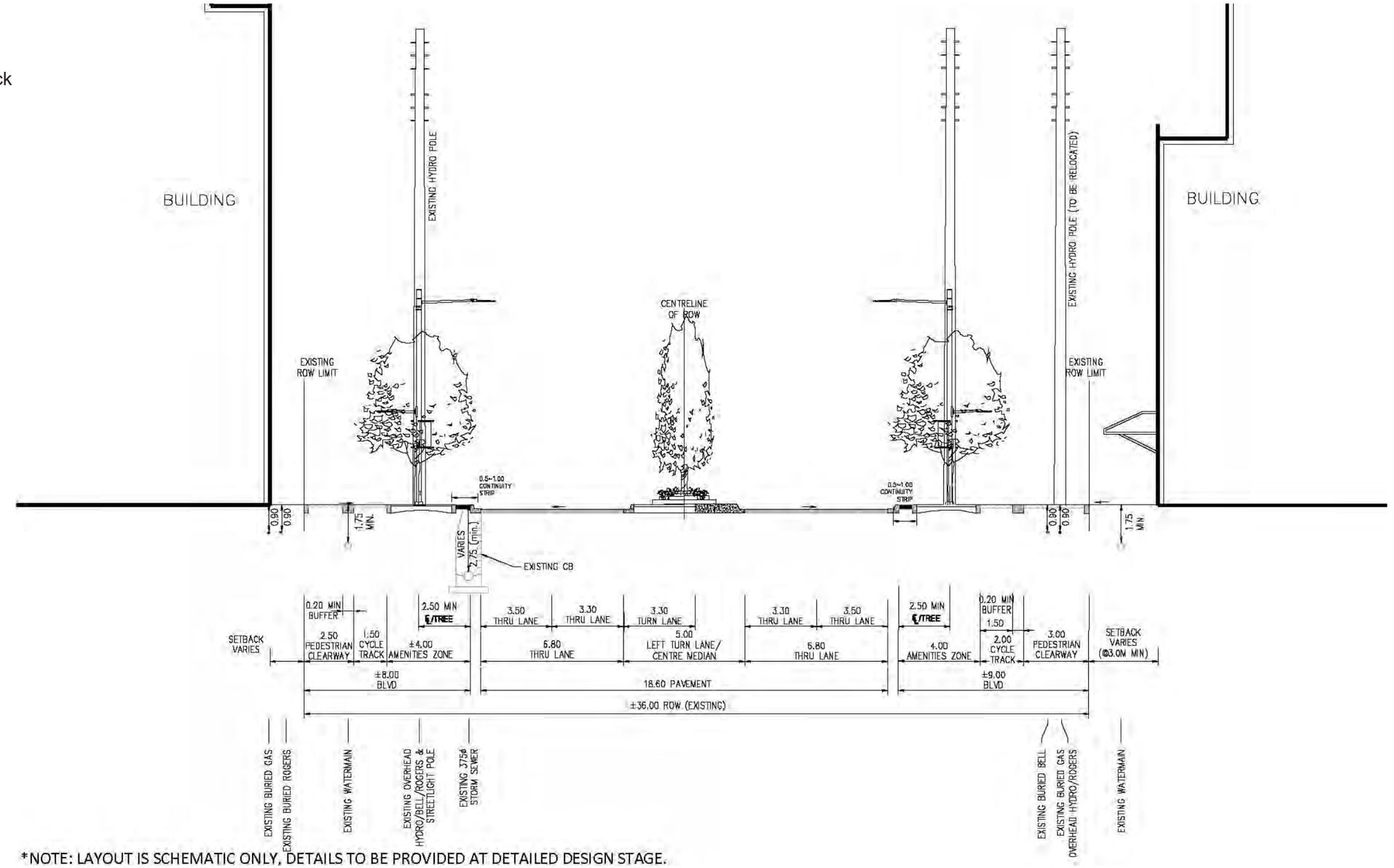
Figure 215: Section A-A
Steeles Gateway Median



*NOTE: LAYOUT IS SCHEMATIC ONLY, DETAILS TO BE PROVIDED AT DETAILED DESIGN STAGE.

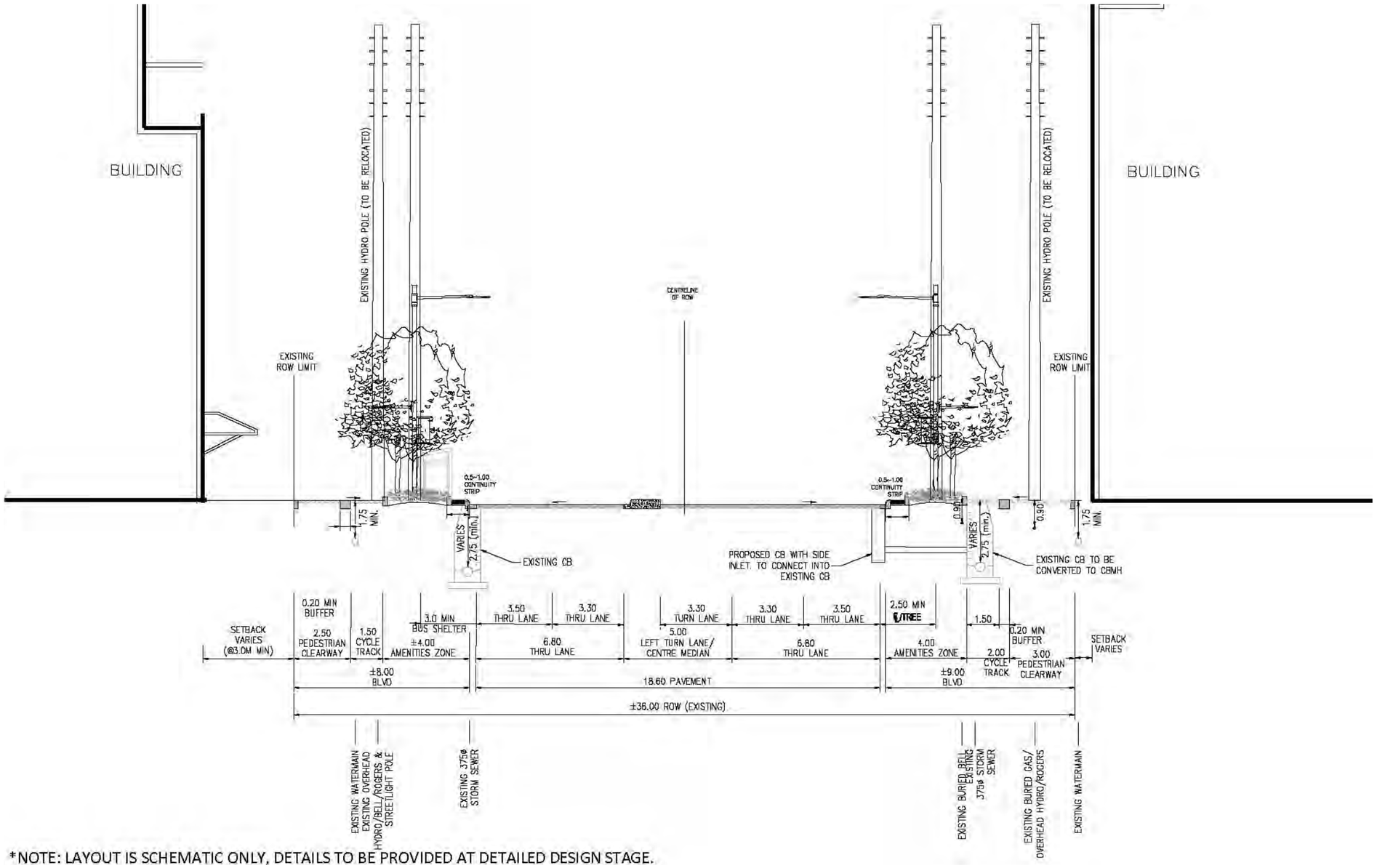
A2. Utilities Location

Figure 216: Section B-B
Steeles Gateway Mid-block



*NOTE: LAYOUT IS SCHEMATIC ONLY, DETAILS TO BE PROVIDED AT DETAILED DESIGN STAGE.

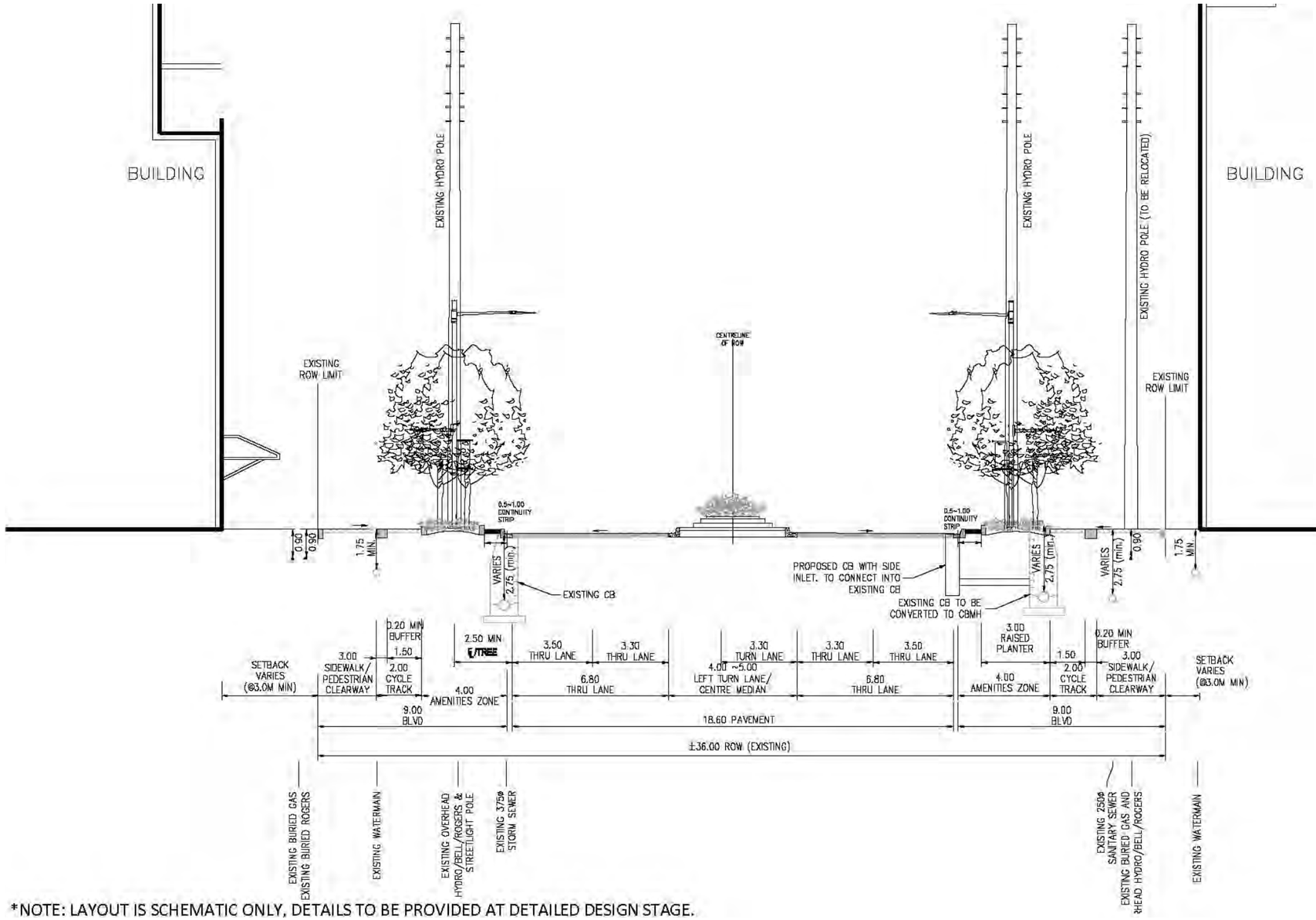
Figure 217: Section C-C
Clark District Mid-block



*NOTE: LAYOUT IS SCHEMATIC ONLY, DETAILS TO BE PROVIDED AT DETAILED DESIGN STAGE.

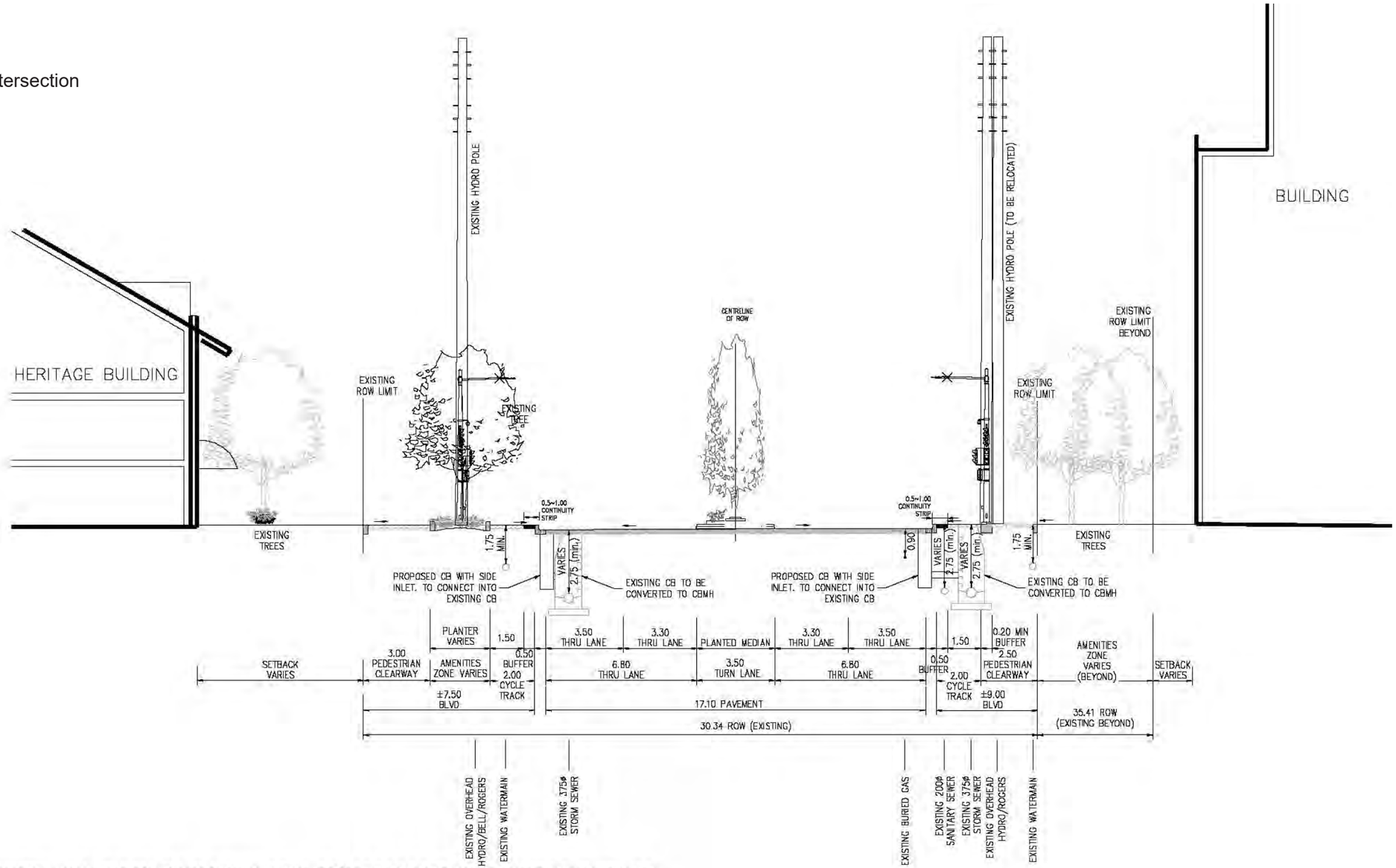
A2. Utilities Location

Figure 218: Section D-D
Clark District



*NOTE: LAYOUT IS SCHEMATIC ONLY, DETAILS TO BE PROVIDED AT DETAILED DESIGN STAGE.

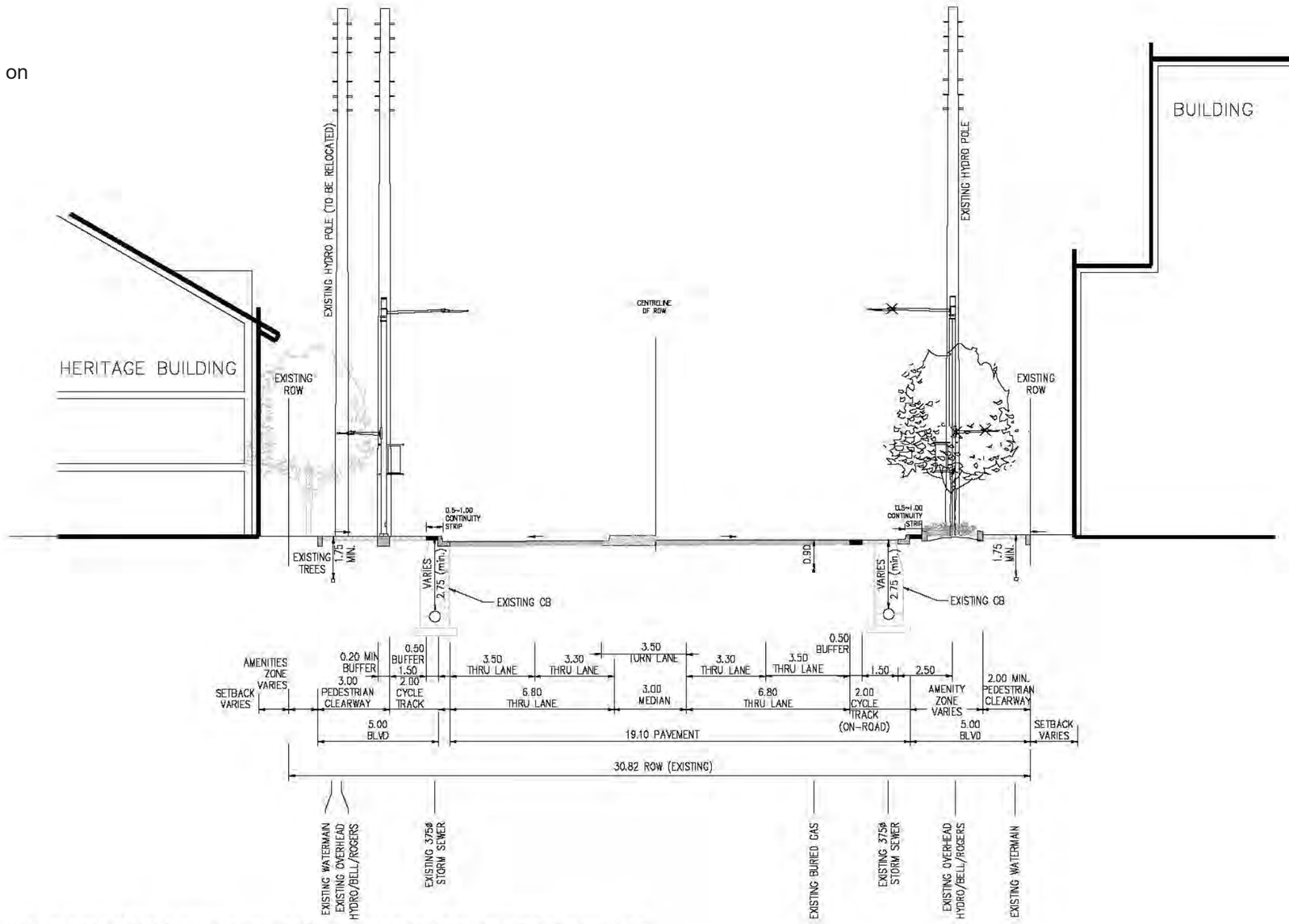
Figure 219: Section E-E
Old Thornhill- Approach to Intersection



*NOTE: LAYOUT IS SCHEMATIC ONLY, DETAILS TO BE PROVIDED AT DETAILED DESIGN STAGE.

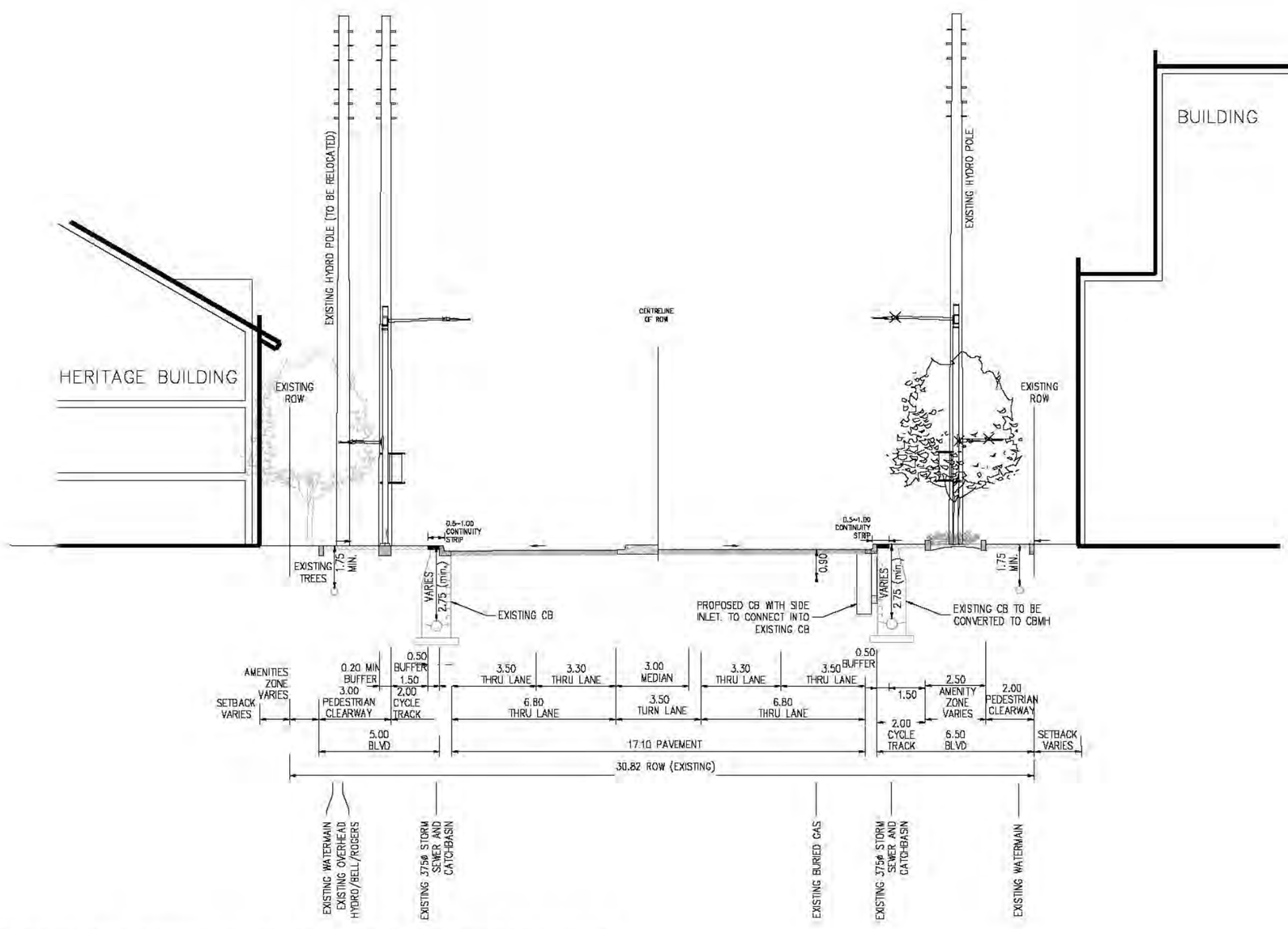
A2. Utilities Location

Figure 220: Section F-F
Old Thornhill (Heritage) Bike Lane on Road Condition



*NOTE: LAYOUT IS SCHEMATIC ONLY, DETAILS TO BE PROVIDED AT DETAILED DESIGN STAGE.

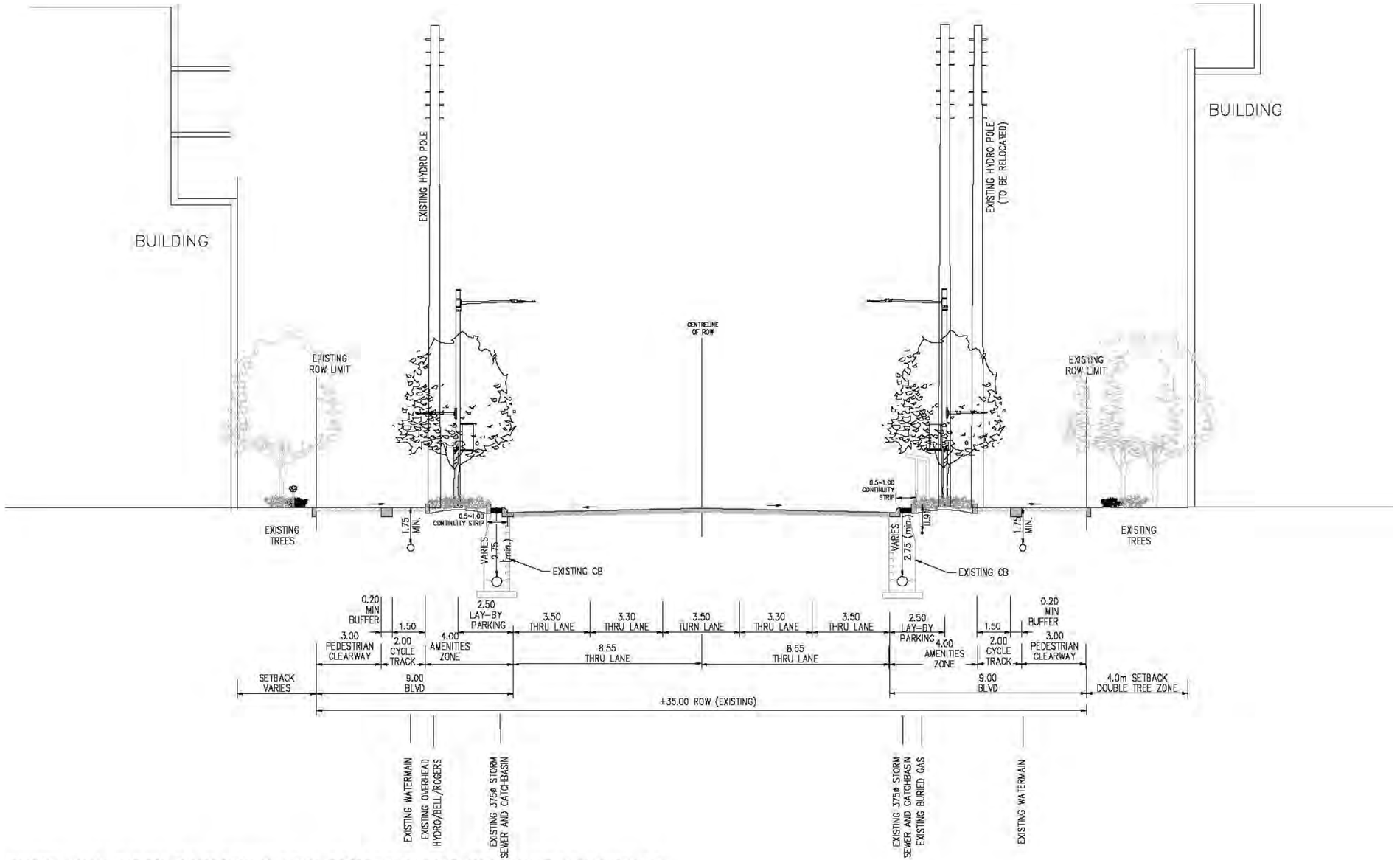
Figure 221: Section F-F
Old Thornhill Heritage



*NOTE: LAYOUT IS SCHEMATIC ONLY, DETAILS TO BE PROVIDED AT DETAILED DESIGN STAGE.

A2. Utilities Location

Figure 222: Section H-H
New Thornhill



*NOTE: LAYOUT IS SCHEMATIC ONLY, DETAILS TO BE PROVIDED AT DETAILED DESIGN STAGE.